United Nations

Report of the Committee on the Peaceful Uses of Outer Space

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Supplement No. 20 (A/62/20)

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Chapter I

Introduction

1. The Committee on the Peaceful Uses of Outer Space held its fiftieth session in Vienna from 6 to 15 June 2007. The officers of the Committee were as follows:

Chairman:	Gérard Brachet (France)
First Vice-Chairman:	Elöd Both (Hungary)
Second Vice-Chairman/Rapporteur:	Paul R. Tiendrébéogo (Burkina Faso)

The unedited verbatim transcripts of the meetings of the Committee are contained in documents COPUOS/T.566-581.

A. Meetings of subsidiary bodies

2. The Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space had held its forty-fourth session in Vienna from 12 to 23 February 2007, under the chairmanship of Mazlan Othman (Malaysia). The report of the Subcommittee was before the Committee (A/AC.105/890).

3. The Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space had held its forty-sixth session in Vienna from 26 March to 5 April 2007, under the chairmanship of Raimundo González Aninat (Chile). The report of the Subcommittee was before the Committee (A/AC.105/891). The unedited verbatim transcripts of the meetings of the Subcommittee are contained in documents COPUOS/Legal/T.748-764.

B. Adoption of the agenda

4. At its opening meeting, the Committee adopted the following agenda:

1. Opening of the session.
2. Adoption of the agenda.
3. Statement by the Chairman.
4. General exchange of views.
5. Ways and means of maintaining outer space for peaceful purposes.
6. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).
7. Report of the Scientific and Technical Subcommittee on its forty-fourth session.
8. Report of the Legal Subcommittee on its forty-sixth session.
9. Spin-off benefits of space technology: review of current status.
10. Space and society.

11. Space and water.

12. International cooperation in promoting the use of space-derived geospatial data for sustainable development.

13. Other matters.

14. Report of the Committee to the General Assembly.

C. Membership

5. In accordance with General Assembly resolutions 1472 A (XIV) of 12 December 1959, 1721 E (XVI) of 20 December 1961, 3182 (XXVIII) of 18 December 1973, 32/196 B of 20 December 1977, 35/16 of 3 November 1980, 49/33 of 9 December 1994, 56/51 of 10 December 2001, 57/116 of 11 December 2002 and 59/116 of 10 December 2004 and decision 45/315 of 11 December 1990, the Committee on the Peaceful Uses of Outer Space was composed of the following 67 States: Albania, Algeria, Argentina, Australia, Austria, Belgium, Benin, Brazil, Bulgaria, Burkina Faso, Cameroon, Canada, Chad, Chile, China, Colombia, Cuba, Czech Republic, Ecuador, Egypt, France, Germany, Greece, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kazakhstan, Kenya, Lebanon, Libyan Arab Jamahiriya, Malaysia, Mexico, Mongolia, Morocco, Netherlands, Nicaragua, Niger, Nigeria, Pakistan, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Senegal, Sierra Leone, Slovakia, South Africa, Spain, Sudan, Sweden, Syrian Arab Republic, Thailand, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay, Venezuela (Bolivarian Republic of) and Viet Nam.

D. Attendance

6. Representatives of the following 56 States members of the Committee attended the session: Algeria, Argentina, Australia, Austria, Belgium, Brazil, Burkina Faso, Canada, Chile, China, Colombia, Cuba, Czech Republic, Ecuador, Egypt, France, Germany, Greece, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kazakhstan, Lebanon, Libyan Arab Jamahiriya, Malaysia, Mexico, Mongolia, Morocco, Netherlands, Nigeria, Pakistan, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Slovakia, South Africa, Spain, Sudan, Syrian Arab Republic, Thailand, Turkey, Ukraine, United Kingdom, United States, Uruguay, Venezuela (Bolivarian Republic of) and Viet Nam.

7. At its 566th and 568th meetings, the Committee decided to invite, at their request, observers for Bolivia, the Dominican Republic, the Holy See, Paraguay, Switzerland, Tunisia and Yemen to attend its fiftieth session and to address it, as appropriate, on the understanding that it would be without prejudice to further requests of that nature and that it would not involve any decision of the Committee concerning status.

8. Observers for the Economic and Social Commission for Asia and the Pacific (ESCAP), the International Telecommunication Union (ITU), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the United Nations Institute for Training and Research (UNITAR) attended the session.

9. The session was also attended by observers for the African Organization of Cartography and Remote Sensing (AOCRS), the Committee on Earth Observation Satellites (CEOS), the Regional Centre for Remote Sensing of North African States (CRTEAN), the European Commission, the European Space Agency (ESA), the European Space Policy Institute (ESPI), EURISY, the secretariat of the Group on Earth Observations (GEO), the International Academy of Astronautics (IAA), the International Astronautical Federation (IAF), the International Mobile Satellite Organization (IMSO), the International Organization of Space Communications (Intersputnik), the International Society for Photogrammetry and Remote Sensing (ISPRS), the National Space Society (NSS), the Secure World Foundation (SWF), the Space Generation Advisory Council (SGAC) and the World Space Week Association (WSWA).

10. A list of representatives of States members of the Committee, States not members of the Committee, United Nations entities and other organizations attending the session is contained in document A/AC.105/2007/INF/1.

E. General statements

11. Statements were made by representatives of the following States members of the Committee during the general exchange of views: Algeria, Austria, Brazil, Burkina Faso, Canada, Chile, China, Colombia, Cuba, Ecuador, France, Germany, Greece, Hungary, India, Indonesia, Iran (Islamic Republic of), Italy, Japan, Libyan Arab Jamahiriya, Malaysia, Nigeria, Pakistan, Philippines, Poland, Republic of Korea, Romania, Russian Federation, Saudi Arabia, South Africa, Syrian Arab Republic, Thailand, Ukraine, United Kingdom, United States, Venezuela (Bolivarian Republic of) and Viet Nam. The representative of Colombia made a statement on behalf of the States Members of the United Nations that are members of the Group of Latin American and Caribbean States. The observer for Switzerland also made a statement. Statements were also made by the observers for ESCAP, ESPI, IAF, ISPRS, NSS and SGAC.

12. The Committee highlighted the remarkable convergence of anniversaries of space activities in 2007, which included the fiftieth anniversary of the advent of the space age with the launch into outer space of the first artificial Earth satellite, Sputnik I, on 4 October 1957; the fortieth anniversary of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (General Assembly resolution 2222 (XXI), annex), which entered into force on 10 October 1967; the fiftieth session of the Committee on the Peaceful Uses of Outer Space; and the fiftieth anniversary of the International Geophysical Year, which was commemorated by proclaiming 2007 International Heliophysical Year.

13. The Committee noted the instrumental role it had played in constructing the legal regime governing outer space activities for peaceful purposes, which was an entirely new branch of international law, and in providing a unique multilateral platform at the global level for enhancing international cooperation for the benefit of all countries, in particular in the area of using space applications for sustainable development.

14. At the 566th meeting, on 6 June, the Director-General of the United Nations Office at Vienna delivered the opening address to the Committee, in which he recalled the major achievements of the Committee in the history of space activities.

the broad area of focus of the Committee and the desirability of a continued collective approach to advancing international cooperation in the peaceful uses of outer space, which should include all relevant stakeholders, both public and private.

15. Also at the 566th meeting, the Chairman made a statement outlining the work of the Committee at its current session. The Chairman also noted that the celebration of the fiftieth session of the Committee was an excellent opportunity to pay tribute to the achievements of the first 50 years of the space age and to reflect on possible developments in the next 50 years. The Chairman emphasized that, since its establishment in 1959, the Committee had played a major role in shaping international standards for space activities in many areas and that it was important to further strengthen this successful role of the Committee for the benefit of all countries.

16. At the 570th meeting, the Director of the Office for Outer Space Affairs of the Secretariat made a statement in which he reviewed the work carried out by the Office during the previous year, including capacity-building in space law, outreach activities and cooperation and coordination with United Nations entities and international intergovernmental and non-governmental organizations.

17. The Committee noted with appreciation the special events organized by the Office for Outer Space Affairs, including the special exhibition entitled "50 Years of Space Achievements", documentaries made by members of the Committee and shown during the session, a photo exhibition on the history of the Committee and various outreach activities carried out during the session in celebration of the fiftieth session of the Committee with the generous support of member States and permanent observers.

18. During the general exchange of views the Committee heard a presentation on "Sentinel Asia contributing to disaster management support in the Asia-Pacific region", by K. Kaku (Japan).

19. The Committee also heard a video message on the occasion of its fiftieth session from the Head of the Federal Space Agency of the Russian Federation.

20. The Committee expressed its deep appreciation and gratitude to Sergio Camacho, Director of the Office for Outer Space Affairs, on the occasion of his retirement, for his outstanding dedication to the work of the Office and to the Committee, and wished him well in his future endeavours.

F. Adoption of the report of the Committee

21. After considering the various items before it, the Committee, at its 581st meeting, on 15 June, adopted its report to the General Assembly containing the recommendations and decisions set out below.

Chapter II

Recommendations and decisions

A. Ways and means of maintaining outer space for peaceful purposes

22. In accordance with paragraph 36 of General Assembly resolution 61/111 of 14 December 2006, the Committee continued its consideration, as a matter of priority, of ways and means of maintaining outer space for peaceful purposes.

23. The representatives of India and the United States made statements during the discussion on this item. During the general exchange of views, statements were also made on this item by representatives of other member States.

24. The Committee noted with satisfaction the agreement of the General Assembly that, during its consideration of the matter, the Committee could continue to consider ways to promote regional and interregional cooperation based on experiences stemming from the Space Conference of the Americas, the African Leadership Conference on Space Science and Technology for Sustainable Development and the role that space technology could play in the implementation of the recommendations of the World Summit on Sustainable Development.[1]

25. The Committee was of the view that, through its work in the scientific, technical and legal fields, the Committee had a fundamental role to play in ensuring that outer space was maintained for peaceful purposes. That role could be strengthened by new initiatives, as well as by continued progress in implementing the recommendations of UNISPACE III.

26. With regard to the implementation of the recommendations of the World Summit on Sustainable Development, the Committee noted that, based on the input provided by member States of the Committee and entities of the United Nations system, the Office for Outer Space Affairs had continued to update the list of space-related initiatives and programmes that corresponded to recommendations contained in the Plan of Implementation of the World Summit on Sustainable Development.[2] The Committee agreed that the Office should continue to update the list, which is available on the website of the Office (www.uncosa.unvienna.org/wssd/index.html).

27. The Committee noted with satisfaction that the Government of Ecuador had hosted the Fifth Space Conference of the Americas in Quito from 24 to 28 July 2006. The Conference had addressed the subjects of international space law, reduction and mitigation of natural disasters, protection of the environment, tele-health and epidemiology, space education and access to knowledge. In the Declaration of San Francisco de Quito, adopted at the conclusion of the Conference, States in Latin America and the Caribbean were invited to set up national space entities to lay the foundation for a regional entity for cooperation.

28. The Committee noted that the Government of Ecuador had established the pro tempore secretariat of the Fifth Space Conference of the Americas to carry out the plan of action of the Conference. It was also noted that the pro tempore secretariat

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[1] *Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August-4 September 2002* (United Nations publication, Sales No. E.03.II.A.1 and corrigendum).

[2] *Report of the World Summit on Sustainable Development*, chap. I, resolution 2, annex.

was being assisted by the Government of Colombia, which had been the host of the Fourth Space Conference of the Americas, by the International Group of Experts of the Space Conferences of the Americas, and by the Government of Guatemala, which would be the host of the Sixth Space Conference of the Americas, in 2009.

29. The Committee noted that both the International Group of Experts and the pro tempore secretariat of the Fifth Space Conference of the Americas, as the regional forum responsible for promoting knowledge of space science and technology and their application in the interests of security, development and the well-being of the countries of the region, needed international support and cooperation to carry out the mandate established at the Conference.

30. The Committee also noted with satisfaction the plans of the Government of South Africa to host the Second African Leadership Conference on Space Science and Technology for Sustainable Development, to be held in Pretoria in late 2007. The theme of the Conference would be "Building African Partnership in Space" and the Conference would, inter alia, examine the role of space technology in development programmes for Africa, the role of the African Union in bringing Africa into the global space enterprise, the current status and future development of the African Resource Management Constellation (ARM) and the status of national and regional capacity-building activities.

31. The Committee noted with satisfaction the role played by these conferences in building regional and international partnerships among States.

32. The Committee noted that the Convention establishing the Asia-Pacific Space Cooperation Organization (APSCO) had entered into force on 12 October 2006.

33. The Committee noted that regional and international cooperation in the field of space activities was essential to strengthen the peaceful use of outer space, to assist States in the development of their space capabilities and to contribute to the achievement of the goals of the United Nations Millennium Declaration (General Assembly resolution 55/2).[3]

34. The view was expressed that, with regard to the need to maintain outer space for peaceful purposes, the Committee should play a key role by disseminating information on and promoting the peaceful uses of outer space and by continuing to contribute to consolidating and perfecting the ethical principles and legal instruments that could guarantee the non-discriminatory use of outer space exclusively for peaceful purposes.

35. The view was expressed that climate change had an impact on international stability and security and that that issue should be considered within the framework of the programme of work of the Committee.

36. The view was expressed that General Assembly resolution 61/75 of 6 December 2006, entitled "Transparency and confidence-building measures in outer space activities", was of relevance to the work of the Committee.

37. The view was expressed that, in order to maintain the peaceful, responsible and international character of the space field, the Committee should promote greater transparency in the space activities being undertaken by various States.

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[3] See A/56/326, annex, and A/58/323, annex.

38. Some delegations expressed the view that the militarization of outer space would undermine the peaceful use of outer space for sustainable development.

39. Some delegations were of the view that the consideration of all issues affecting the peaceful use of outer space, including the use of space technology applications for the sustainable growth and development of all States, would require consideration by the Committee of the possibility of establishing a practical mechanism for coordinating and harmonizing its work with other related bodies, such as relevant United Nations entities, the First Committee of the General Assembly and the Conference on Disarmament.

40. The view was expressed that calls for the placement of weapons in outer space would inevitably lead to suspicion and tension among States and the destruction of a climate of trust and cooperation and that, therefore, the discussion on maintaining outer space for peaceful purposes should continue to be held by the Committee.

41. The view was expressed that the Legal Subcommittee should play a role in the adoption of further measures to prevent the introduction of weapons into, and an arms race in, outer space.

42. The view was expressed that the Committee had been created exclusively to promote international cooperation in the peaceful uses of outer space and that disarmament issues were more appropriately dealt with in other forums, such as the First Committee of the General Assembly and the Conference on Disarmament.

43. The view was expressed that the best way to maintain outer space for peaceful purposes was to strengthen international cooperation, in particular with respect to the safety and security of space assets.

44. The view was expressed that, in order to further the objective of promoting the peaceful uses of outer space, the limited resources of outer space, such as geostationary orbital positions, should be shared equitably among countries.

45. The Committee recommended that, at its fifty-first session, in 2008, it should continue its consideration, on a priority basis, of the item on ways and means of maintaining outer space for peaceful purposes.

B. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space

46. In accordance with General Assembly resolution 61/111, the Committee considered the item on the implementation of the recommendations of UNISPACE III.

47. The representatives of Brazil, Canada, India and Japan made statements under the item. Representatives of other member States also made statements relating to this item during the general exchange of views and during discussions on the report of the Scientific and Technical Subcommittee on its forty-fourth session.

48. The Committee had before it, for its consideration, the revised draft text for the contribution of the Committee to the work of the Commission on Sustainable Development for the thematic cluster 2008-2009 (A/AC.105/2006/CRP.4).

49. The Committee noted that, in accordance with General Assembly resolution 61/111, the Scientific and Technical Subcommittee at its forty-fourth session had convened the Working Group of the Whole to consider the implementation of the recommendations of UNISPACE III. The Chairman of the Working Group of the Whole was Muhammad Nasim Shah (Pakistan).

50. The Committee endorsed the recommendations of the Scientific and Technical Subcommittee and its Working Group of the Whole with regard to the implementation of the recommendations of UNISPACE III.

51. The Committee heard under this item a presentation entitled "Celebrations of World Space Week in Bangladesh, 2003-2006", by F. R. Sarker (WSWA).

52. The Committee emphasized the importance of implementing the Plan of Action contained in its report to the General Assembly on the implementation of the recommendations of UNISPACE III (A/59/174, sect. VI.B), which had been endorsed by the Assembly in its resolution 59/2 of 20 October 2004.

53. The Committee noted that, in accordance with General Assembly resolution 59/2, the Committee should continue to consider, in its future sessions, the implementation of the recommendations of UNISPACE III until the Committee considered that concrete results had been achieved.

54. The Committee agreed that the recommendations of UNISPACE III were being effectively implemented through the use of multi-year workplans, the establishment of action teams and reports from ad hoc and other groups on their activities. The Committee agreed that that flexible approach enabled it to address a wide range of important and related issues.

55. The view was expressed that the Working Group of the Whole should focus its discussion on the implementation of the following three actions called for in the Plan of Action: maximizing the benefits of existing space capabilities for disaster management; maximizing the benefits of the use and applications of global navigation satellite systems (GNSS) to support sustainable development; and enhancing capacity-building in space-related activities.

56. The Committee noted with appreciation that Member States were also contributing to the implementation of the recommendations of UNISPACE III through a number of national and regional activities and efforts, and that some Member States were contributing to the implementation of the recommendations of UNISPACE III by continuing to contribute to the work of the action teams established by the Committee to implement those recommendations. The Committee noted with satisfaction that, during its fiftieth session, the Action Teams on the Environmental Monitoring Strategy, on Public Health, and on Sustainable Development had met, and that the Action Team on Public Health had advanced its work, including through the establishment of a Web portal to facilitate the exchange of information.

57. The Committee also noted with appreciation that Member States were implementing the recommendations of UNISPACE III by, among other things, actively supporting and participating in the work related to the Global Earth Observation System of Systems (GEOSS) 10-Year Implementation Plan, the efforts of the Integrated Global Observing Strategy (IGOS) and CEOS.

58. The view was expressed that the presence of non-governmental entities and the willingness of experts to make special presentations had enriched the Committee

and its subcommittees, and that ultimate success in implementing the recommendations of UNISPACE III would depend on their continued involvement.

59. The Committee noted with appreciation that the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (SPIDER) and the International Committee on Global Navigation Satellite Systems (ICG) had been established as concrete results of the implementation of the recommendations of UNISPACE III. The Committee further noted that ICG had held its first meeting in Vienna on 1 and 2 November 2006 and had held a preparatory meeting on 5 June 2007 for its second meeting, to be held in Bangalore, India, from 4 to 7 September 2007. The report on the first meeting is contained in document A/AC.105/879. Progress made in the work on SPIDER is reflected in paragraphs 140-160 of the present report.

60. The Committee welcomed with satisfaction the link established between its work relating to the implementation of the recommendations of UNISPACE III and the work being carried out by the Commission on Sustainable Development.

61. The Committee noted with appreciation that the Working Group of the Whole of the Scientific and Technical Subcommittee had conducted a first review of the draft concise document relating to the issues to be addressed by the Commission on Sustainable Development in the period 2008-2009. On the basis of comments received from member States during the forty-fourth session of the Subcommittee and other sources, in particular the report of the Expert on Space Applications (A/AC.105/874) and the report of the Secretary-General on the coordination of space-related activities within the United Nations system: directions and anticipated results for the period 2007-2008 (A/AC.105/886), a revised version of the draft document had been prepared (A/AC.105/2007/CRP.4).

62. In accordance with its decision taken at its forty-ninth session, the Committee reviewed and finalized, at its fiftieth session, its contribution to the issues to be addressed by the Commission on Sustainable Development in the period 2008-2009. The document will be made available in all languages to the Commission at its sixteenth session, the review session of the third implementation cycle, to be held between 5 and 16 May 2008.

63. The Committee agreed to continue contributing to the policy year of each of the two-year cycles of the multi-year programme of work of the Commission on Sustainable Development and to consider its contribution to the work of the Commission in the period 2010-2011 at its sessions in 2008 and 2009. The Committee requested the Secretariat to develop a plan for optimizing its contributions to the thematic clusters, for consideration by the Working Group of the Whole during the forty-fifth session of the Scientific and Technical Subcommittee.

64. The Committee agreed that the Director of the Division for Sustainable Development of the Department of Economic and Social Affairs of the Secretariat should continue to be invited to participate in the sessions of the Committee to advise on how best it could contribute to the work of the Commission on Sustainable Development and that the Director of the Office for Outer Space Affairs should attend the sessions of the Commission with a view to raising awareness and promoting the benefits of space science and technology, in particular in the areas being addressed by the Commission.

65. The Committee took note with appreciation of the reports by Member States and by the World Space Week Association (WSWA) on the promotion and organization of public outreach activities in celebration of World Space Week.

66. The Committee noted with appreciation that a report on the international celebration of World Space Week in 2006, prepared by WSWA in cooperation with the Office for Outer Space Affairs, had been made available in a special publication (ST/SPACE/35).

C. Report of the Scientific and Technical Subcommittee on its forty-fourth session

67. The Committee took note with appreciation of the report of the Scientific and Technical Subcommittee on its forty-fourth session (A/AC.105/890), which contained the results of its deliberations on the items assigned to it by the General Assembly in its resolution 61/111.

68. The Committee expressed its appreciation to the outgoing Chairman of the Scientific and Technical Subcommittee, B. N. Suresh (India) for his able leadership and contributions during the forty-third session of the Subcommittee. The Committee also expressed its appreciation to Mazlan Othman (Malaysia) for her able leadership and contributions during the forty-fourth session of the Subcommittee.

69. At the 566th meeting of the Committee, on 6 June, the Chairman of the Scientific and Technical Subcommittee made a statement on the work of the Subcommittee at its forty-fourth session.

70. The representatives of Algeria, Austria, Brazil, Chile, China, Colombia, the Czech Republic, Germany, Greece, India, Indonesia, Japan, Malaysia, the Netherlands, Nigeria, the Republic of Korea, the Russian Federation, the United States and Venezuela (Bolivarian Republic of) made statements under this item. The observer for Switzerland also made a statement. During the general exchange of views, statements relating to this item were also made by representatives of other member States.

71. The Committee heard the following presentations under this agenda item:

(a) "Observation and surveillance of NEOs", by Sergiy Gusyev (Ukraine);

(b) "Use of SKAKO (automatic system of control and analysis of outer space) for the observation of space debris", by Sergiy Gusyev (Ukraine);

(c) "Space disposal of nuclear waste", by Oleg Ventskovskiy (Ukraine);

(d) "Yuzhnoye Design Office technologies in national and international space programmes", by Oleg Ventskovskiy (Ukraine);

(e) "Colombian Space Commission structure, main achievements and future plans", by Iván Darío Gomez-Guzman (Colombian Space Commission);

(f) "Space conferences/FIDAE", by Christian Gomez (Chile).

72. The Committee welcomed the special presentations made before the Subcommittee on various topics and noted that such presentations provided complementary technical content for the deliberations of the Subcommittee, timely

and useful information on new programmes and developments in the space community and illustrative examples of space technology.

73. The Committee took note with interest of the report of the Inter-Agency Meeting on Outer Space Activities on its twenty-seventh session (A/AC.105/885) and the report of the Secretary-General on the coordination of space-related activities within the United Nations system: directions and anticipated results for the period 2007-2008 (A/AC.105/886).

1. United Nations Programme on Space Applications

(a) Activities of the United Nations Programme on Space Applications

74. The Expert on Space Applications briefed the Committee on the overall strategy for the implementation of the United Nations Programme on Space Applications.

75. The Committee noted the priority thematic areas of the Programme, as referred to in the report of the Expert on Space Applications (A/AC.105/874, para. 5).

76. The Committee took note of the activities of the Programme carried out in 2006, as set out in the report of the Scientific and Technical Subcommittee (A/AC.105/890, paras. 37-40) and in the report of the Expert on Space Applications (A/AC.105/874, para. 55 and annex I). The Committee expressed its appreciation to the Office for Outer Space Affairs for the manner in which the activities of the Programme had been implemented with the limited funds available. The Committee also expressed its appreciation to the Governments and intergovernmental and non-governmental organizations that had sponsored those activities. The Committee noted with satisfaction that further progress was being made in the implementation of the activities of the Programme for 2007, as set out in the report of the Subcommittee (A/AC.105/890, para. 41).

77. The Committee noted that, in order to avoid duplication of efforts between the activities of SPIDER and those in the thematic area of disaster management of the United Nations Programme on Space Applications, in the Programme the approach of "integrated space technology applications" was taken, in which disaster management was integrated with other thematic areas such as natural resource management and environmental monitoring, tele-education and telemedicine, and basic space science. The Committee further noted that it was necessary for the United Nations Programme on Space Applications to continue to include the thematic area of disaster management in order to ensure the integrity of the Programme's overall efforts.

78. The Committee noted with satisfaction that the Programme was helping developing countries and countries with economies in transition to participate in and benefit from the space activities being carried out in implementing various recommendations of UNISPACE III.

79. The Committee noted that the Office for Outer Space Affairs was fully aware of the increasing use of micro- and nanotechnologies, which had the potential to increase reliability and reduce power consumption and volume requirements, thereby reducing maintenance efforts and contributing to lowering costs. It noted that the United Nations/Russian Federation/European Space Agency Workshop on the Use of Microsatellite Technologies for Monitoring the Environment and Its

Impact on Human Health, to be held from 3 to 7 September 2007, would discuss the application of micro- and nanotechnologies.

80. The Committee noted with satisfaction the initiative of the Chilean Space Agency, in cooperation with the Office for Outer Space Affairs, to hold a workshop on space applications and climate change in Santiago from 1 to 2 April 2008, in the context of the International Air and Space Fair.

81. The Committee once again expressed its concern that the financial resources available for the Programme remained limited and appealed to the donor community to support the Programme through voluntary contributions. The Committee held the view that the limited resources available to the United Nations should be focused on activities of the highest priority; it noted that the United Nations Programme on Space Applications was a priority activity of the Office for Outer Space Affairs.

(i) Conferences, training courses and workshops of the United Nations Programme on Space Applications

82. The Committee expressed its appreciation to the Government of Morocco for co-sponsoring and hosting the activities of the United Nations Programme on Space Applications held in April 2007 (A/AC.105/890, para. 41 (a)).

83. The Committee endorsed the workshops, training courses, symposiums and expert meetings planned for the remaining part of 2007, and expressed its appreciation to Argentina, Austria, India, Japan, Mexico, the Russian Federation, Sudan and Viet Nam, as well as to ESA and IAF, for co-sponsoring, hosting and supporting those activities (A/AC.105/890, para. 41 (b)-(j)).

84. The Committee endorsed the programme of workshops, training courses, symposiums and conferences planned to be held in 2008 for the benefit of developing countries, as follows:

(a) Three workshops on integrated applications of space technologies for disaster mitigation, environmental monitoring and natural resource protection, which would also address various issues related to the United Nations global agendas for development;

(b) Two workshops on the use of GNSS for integrated applications;

(c) One training course on the satellite-aided search and rescue system;

(d) One United Nations/IAF workshop;

(e) One workshop on space law;

(f) One workshop on basic space science;

(g) Two workshops on tele-health.

85. The Committee noted with appreciation that, since its forty-ninth session, additional resources for 2008 had been offered by various Member States and organizations.

86. The Committee noted with appreciation that the host countries of the regional centres for space science and technology education, affiliated to the United Nations, were providing significant financial and in-kind support to the centres.

(ii) Long-term fellowships for in-depth training

87. The Committee expressed its appreciation to the Government of Italy, which, through the Politecnico di Torino and the Istituto Superiore Mario Boella and with the collaboration of the Istituto Elettrotecnico Nazionale Galileo Ferraris, had provided five 12-month fellowships for postgraduate studies in GNSS and related applications.

88. The Committee expressed its appreciation to the National Commission on Space Activities (CONAE) of Argentina for providing instructors, computer facilities and fellowships for a six-week training course at the Advanced School for Training in Landscape Epidemiology of the Mario Gulich Institute for Advanced Space Studies in Córdoba, Argentina. The fellowship programme had been offered as a follow-up to the United Nations/European Space Agency/Argentina Workshop on the Use of Space Technology for Human Health, which had been held in 2005, and had provided training on the theory and practice of the use of satellite images, geographical information systems (GIS) and the statistical techniques most commonly used in landscape epidemiology to 20 representatives from the Latin America and the Caribbean region. The Office for Outer Space Affairs had defrayed the cost of air travel of participants.

89. The Committee noted that it was important to increase opportunities for in-depth education in all areas of space science, technology and applications through long-term fellowships and urged Member States to make such opportunities available at their relevant institutions.

(iii) Technical advisory services

90. The Committee noted with appreciation the technical advisory services provided under the United Nations Programme on Space Applications in support of activities and projects promoting regional cooperation in space applications, as referred to in the report of the Expert on Space Applications (A/AC.105/874, paras. 36-43).

(b) International Space Information Service

91. The Committee noted with satisfaction that the publication entitled *Highlights in Space 2006*[4] had been issued.

92. The Committee noted with satisfaction that the Secretariat had continued to enhance the International Space Information Service and the improved and enhanced website of the Office for Outer Space Affairs (www.unoosa.org). The Committee also noted with satisfaction that the Secretariat was maintaining a website on the coordination of outer space activities within the United Nations system (www.uncosa.unvienna.org).

(c) Regional and interregional cooperation

93. The Committee noted with satisfaction that the United Nations Programme on Space Applications continued to emphasize cooperation with Member States at the regional and global levels, aimed at supporting the regional centres for space science and technology education, affiliated to the United Nations. In its resolution 50/27 of 6 December 1995, the General Assembly had endorsed the

[4] United Nations publication, Sales No. E.07.I.9.

recommendation of the Committee that those centres be established on the basis of affiliation to the United Nations as early as possible. The Committee noted that all the regional centres had entered into an affiliation agreement with the Office for Outer Space Affairs.

94. The Committee also noted that the General Assembly, in its resolution 61/111, had agreed that the regional centres should continue to report to the Committee on their activities on an annual basis.

95. The Committee noted that the highlights of the activities of the regional centres supported under the Programme in 2006 and the activities planned for 2007 and 2008 were included in the report of the Expert on Space Applications (A/AC.105/874, annex III).

96. The Committee noted that the Government of India had continuously provided strong support to the Regional Centre for Space Science and Technology Education in Asia and the Pacific since its inception in 1995, including making appropriate facilities and expertise available to it through the Indian Space Research Organisation and Department of Space and noted with satisfaction that the Centre had celebrated its tenth anniversary in 2005. The Committee noted that, to date, the Centre had conducted 26 nine-month postgraduate courses: 11 on remote sensing and GIS and five each on satellite communications, satellite meteorology and global climate, and space and atmospheric science. These programmes had benefited some 708 participants from a total of 30 countries in the Asia-Pacific region. A total of 26 participants from 16 countries outside the Asia-Pacific region had also benefited. Of those 734 participants, 82 had received Master of Technology degrees. The Centre had also conducted 18 short courses and workshops in the previous 10 years. It had held the twelfth meeting of its Governing Board on 27 April 2007 and the ninth meeting of its Technical Advisory Committee on 25 April 2007. After having completed more than a decade of educational activities, the Centre was set to achieve the status of international centre of excellence in training, education and research.

97. The Committee noted that the campuses in Brazil and Mexico of the Regional Centre for Space Science and Technology Education in Latin America and the Caribbean had started organizing nine-month postgraduate courses in 2003. The Centre was supported by the Governments of Brazil and Mexico. The campus in Brazil was benefiting from the expertise and laboratory and classroom facilities made available to it by the National Institute for Space Research (INPE) of Brazil. Similar high-quality facilities had been made available on the campus in Mexico, which was supported by the National Institute of Astrophysics, Optics and Electronics of Mexico. The campus in Brazil had already conducted four nine-month postgraduate courses on remote sensing and GIS. The Centre had further conducted six short courses and workshops since its inauguration. It was noted that, in 2006, the meeting of the Governing Board of the Centre had reinforced the terms of the agreement for the establishment of the Centre with respect to the adherence of other States in Latin America and the Caribbean to the agreement.

98. The Committee noted that the African Regional Centre for Space Science and Technology—in French Language had been organizing nine-month postgraduate courses since its inauguration in 1998. Based in Rabat, the Centre was supported by the Governments of Algeria and Morocco and important national institutions such as the Royal Centre for Remote Sensing, the Mohammadia Engineering School, the Hassan II Institute of Agronomy and Veterinary Medicine, the National Institute of

Telecommunications and the National Directorate of Meteorology. The Committee noted that the Centre had already conducted nine nine-month postgraduate courses on remote sensing and GIS, satellite communications, and satellite meteorology and global climate. Since its inauguration, the Centre had organized 14 short workshops and conferences.

99. The Committee noted that the African Regional Centre for Space Science and Technology Education—in English Language had, since its inauguration in 1998, organized eight nine-month postgraduate courses, on remote sensing and GIS, satellite meteorology and global climate, satellite communications, and space and atmospheric science. It had also conducted seven short activities. In 2006, 47 participants had completed the training programme offered by the Centre. Also in 2006, the Centre had become a national focal point for the Nigerian outreach programme on space education, targeting students in secondary schools. Located at Obafemi Awolowo University in Ile-Ife, the Centre was strongly supported by the National Space Research and Development Agency (NASRDA) of Nigeria. The director of the Centre was seeking support from Governments of member States in Africa in order to strengthen the operation of the Centre for the benefit of the region.

100. The Committee noted that the China National Space Administration (CNSA), in cooperation with the secretariat of the Asia-Pacific Multilateral Cooperation in Space Technology and Applications (AP-MCSTA), had organized its first postgraduate course on space technology and applications in July 2006. The course had been organized and conducted by Beijing University of Aeronautics and Astronautics (BUAA). The Government of China and the secretariat of AP-MCSTA had together provided full or partial scholarships for 18 participants from developing countries in the Asia-Pacific region. The course consisted of classroom learning at BUAA for nine months and subsequent pilot project research in the home countries of the participants for 6-12 months.

101. The Committee noted that the Office for Outer Space Affairs had provided technical and financial support to the Space Conference of the Americas, hosted by the Government of Costa Rica in 1990, by the Government of Chile in 1993, by the Government of Uruguay in 1996, by the Government of Colombia in 2002 and by the Government of Ecuador in 2006, and that that cooperation would continue for the Sixth Space Conference, to be held in Guatemala in 2009.

102. The Committee noted that the pro tempore secretariat of the Fifth Space Conference of the Americas, hosted by Ecuador, had expressed its appreciation for the advisory support in the planning and conduct of the Conference that had been provided by the International Group of Experts of the Space Conferences of the Americas, comprised of R. González, C. Rodríguez Brianza, M. Fea, C. Arévalo, B. Morejón, V. Canuto and S. Camacho. The Committee urged the Group of Experts to provide support for the implementation of the plan of action of the Conference, as well as for the organization of the Sixth Space Conference of the Americas, to be held in 2009.

103. The Committee noted with satisfaction that, since 2005, the United Nations Programme on Space Applications had oriented its activities towards including supporting low-cost or no-cost pilot projects that could contribute to sustainable development at the national, regional and international levels. The increased focus of the Programme on such projects had yielded tangible results (A/AC.105/874, paras. 45-54).

104. The Committee noted that, within its limited budget and with voluntary contributions from each participating entity, the Programme had implemented pilot projects in various thematic areas such as developing early warning strategies for disaster management using space technologies; establishing base maps for certain types of natural disaster; establishing national data-sharing policies; providing capacity-building, training and education; developing methodologies for predicting and mitigating infectious diseases; assessing communication system network configurations; conducting needs assessments for implementing national space application programmes; and developing the Geo Occupancy Analyser Tool (GOAT).

105. The Committee noted that that the Office for Outer Space Affairs had endeavoured to increase its support for pilot projects of national or regional significance in developing countries. The Office would continue those efforts with the voluntary support of the participating entities, based on the principle that funds were not transferred among the parties to a project. The Office would also place emphasis on the sustainability of projects with a view to applying space technologies to contribute to economic and social growth.

106. The Committee further noted that the Office would welcome offers of co-sponsorship for future projects that benefited developing countries.

(d) International Satellite System for Search and Rescue

107. The Committee recalled that, at its forty-fourth session, it had agreed that a report on the activities of the International Satellite System for Search and Rescue (COSPAS-SARSAT) should be considered annually by the Committee as part of its consideration of the United Nations Programme on Space Applications and that member States should report on their activities regarding COSPAS-SARSAT.[5]

108. The Committee noted with satisfaction that COSPAS-SARSAT was using space technology to save the lives of people in distress around the globe. Since becoming operational in 1982, COSPAS-SARSAT had introduced analogue and digital emergency beacons worldwide and had expanded its space segment to include ad hoc payloads on geostationary and low-Earth orbit satellites that currently provided alert signals.

109. The Committee noted with satisfaction that COSPAS-SARSAT currently had 38 member States, which offered seven polar-orbiting and five geostationary satellites that provided worldwide coverage for the search and rescue beacons. Since 1982, COSPAS-SARSAT had helped to save approximately 20,500 lives.

110. The Committee took note of the phasing-out of the beacons operating at 121.5 MHz, which was to be completed by 1 February 2009. The Committee noted with satisfaction that outreach efforts were being undertaken to raise awareness of that programme change.

2. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment

111. The Committee noted that, in accordance with General Assembly resolution 61/111, the Scientific and Technical Subcommittee had continued its consideration of matters relating to remote sensing of the Earth by satellite. The

[5] *Official Records of the General Assembly, Fifty-sixth Session, Supplement No. 20* and corrigendum (A/56/20 and Corr.1), para. 220.

Committee took note of the discussion of the Subcommittee under that agenda item, as reflected in the report of the Subcommittee (A/AC.105/890, paras. 68-78).

112. The Committee stressed the important role of Earth observation satellite data in supporting activities in a number of key areas of sustainable development and emphasized, in that connection, the importance of providing non-discriminatory access to remote sensing data and to derived information at a reasonable cost or free of charge and in a timely manner, as well as the importance of building capacity in the use of remote sensing technology, in particular to meet the needs of developing countries.

113. The Committee noted that the African Union and UNESCO had organized a high-level scientific workshop of African experts and partners, which had been held in Paris from 30 May to 1 June 2007, with the aim of assisting the African Union in defining its own strategy for the applications of satellite remote sensing for sustainable development in Africa. The Committee also noted that the workshop had concluded that commitment by the African Union and its member States to the implementation of the strategy, which had been adopted during the workshop, could benefit people in Africa and enable Africa to contribute to global knowledge.

114. The view was expressed that the free availability on the Internet of high resolution imagery of sensitive areas was cause for concern. That delegation proposed that guidelines consistent with national policies should be developed to regulate the availability of such sensitive data in the public domain.

115. The Committee encouraged further international cooperation among member States in the use of remote sensing satellites, in particular by sharing experience and technologies through bilateral, regional and international collaborative projects.

3. Space debris

116. The Committee noted that, in accordance with General Assembly resolution 61/111, the Scientific and Technical Subcommittee had continued its consideration of the agenda item on space debris, in accordance with the workplan adopted at its thirty-eighth session (A/AC.105/761, para. 130) and amended at its forty-second session (A/AC.105/848, annex II, para. 6). The Committee took note of the discussion of the Subcommittee on space debris, as reflected in the report of the Subcommittee (A/AC.105/890, paras. 79-101).

117. The Committee noted with great satisfaction that the space debris mitigation guidelines had been adopted by the Subcommittee at its 673rd meeting (A/AC.105/890, annex IV).

118. At its 572nd meeting, the Committee endorsed the space debris mitigation guidelines (see annex).

119. The Committee agreed that its approval of the voluntary guidelines for the mitigation of space debris would increase mutual understanding on acceptable activities in space and thus enhance stability in space-related matters and decrease the likelihood of friction and conflict.

120. Some delegations expressed concern about the risk to manned space flights, space infrastructures and space activities from long-lived space debris generated by the intentional destruction of space systems.

121. Other delegations expressed concern that the introduction of weapons into outer space might pose a greater risk than did space debris to manned space flights, space infrastructures and space activities, as well as to the peaceful use of outer space.

122. Some delegations expressed the view that the creation of space debris, whether intentional or not, could be avoided through implementation of the space debris mitigation guidelines endorsed by the Committee at its current session.

123. Some delegations expressed the view that a legally non-binding set of guidelines was not sufficient and would disadvantage developing countries. Those delegations were of the view that the issue of space debris should also be considered by the Legal Subcommittee, with a view to developing a binding legal framework.

124. The view was expressed that the approval of voluntary guidelines should open access to data and information on all types of space debris.

125. Some delegations expressed the view that the Committee should consider submitting the space debris mitigation guidelines as a draft resolution to the General Assembly at its sixty-second session, in order to stress the importance of the guidelines and the continued effectiveness of the Committee in addressing major issues affecting long-term access to outer space and its use for peaceful purposes.

126. The Committee expressed its appreciation to Claudio Portelli (Italy) for his work as Chairman of the Working Group on Space Debris, which had developed the space debris mitigation guidelines endorsed by the Committee.

127. The Committee noted with appreciation that some Member States had already implemented space debris mitigation measures on a voluntary basis, through national mechanisms and consistent with the Inter-Agency Space Debris Coordination Committee (IADC) Guidelines.

128. Some delegations expressed the view that, while the voluntary guidelines represented a significant advance, they would not cover all debris-producing situations and, accordingly, would need to be kept under consideration. Those delegations also expressed the view that efforts should continue to be made to develop the technical ability to begin removing existing space debris from its orbit in order to halt the deterioration in the space environment.

4. Use of nuclear power sources in outer space

129. The Committee noted that, in accordance with General Assembly resolution 61/111, the Scientific and Technical Subcommittee had continued its consideration of the item on the use of nuclear power sources (NPS) in outer space. The Committee took note of the discussion of the Subcommittee on the use of nuclear power sources in outer space, as reflected in the report of the Subcommittee (A/AC.105/890, paras. 102-114).

130. The Committee noted that the Subcommittee, at its forty-fourth session, had reconvened its Working Group on the Use of Nuclear Power Sources in Outer Space under the chairmanship of Sam A. Harbison (United Kingdom). The Committee noted with satisfaction that the Working Group had made significant progress and had successfully carried out detailed work in identifying and developing an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable nuclear power source applications in outer space.

131. The Committee noted that, during the forty-fourth session of the Subcommittee, the Working Group had updated and finalized its report entitled "Development of an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable nuclear power source applications in outer space" (A/AC.105/C.1/L.289/Rev.1).

132. The Committee endorsed the decision of the Subcommittee that, in order to prepare and publish the safety framework for NPS applications in outer space, a partnership be established between the Subcommittee and the International Atomic Energy Agency (IAEA) by means of a joint group of experts, consisting of representatives of the Subcommittee and of IAEA.

133. The Committee also endorsed the new workplan of the Working Group for the period 2007-2010 for the purpose of establishing a joint Subcommittee/IAEA safety framework development activity for NPS applications in outer space.

134. Some delegations were of the view that serious consideration should always be given to the possible impact that missions carrying NPS on board could have on human life and the environment.

135. Some delegations noted with satisfaction the efforts of the Working Group to shorten the time frame for the accomplishment of its work.

5. Near-Earth objects

136. The Committee noted that, in accordance with General Assembly resolution 61/111, the Scientific and Technical Subcommittee had considered an item on near-Earth objects under the three-year workplan amended at its forty-second session (A/AC.105/848, annex II). The Committee took note of the discussion of the Subcommittee under that agenda item, as reflected in the report of the Subcommittee (A/AC.105/890, paras. 115-125).

137. The Committee noted that the Subcommittee had established a Working Group on Near-Earth Objects for one year, under the chairmanship of Richard Tremayne-Smith (United Kingdom).

138. The Committee noted with satisfaction the work carried out by the Working Group and the Action Team on Near-Earth Objects and endorsed the new multi-year workplan for 2008-2010 (A/AC.105/890, annex III).

139. The view was expressed that the work of the Working Group on Near-Earth Objects could result in the proposal of international procedures to mitigate the threat of near-Earth objects for consideration by the Committee in the near future.

6. Space-system-based disaster management support

140. The Committee noted that, in accordance with General Assembly resolution 61/111, the Scientific and Technical Subcommittee had considered the agenda item on space-system-based disaster management support in accordance with the three-year workplan adopted at its forty-first session (A/AC.105/823, annex II, para. 15) and amended at its forty-second session (A/AC.105/848, annex I, para. 21). The Committee took note of the discussions of the Subcommittee under that agenda item, as contained in the report of the Scientific and Technical Subcommittee (A/AC.105/890, paras. 126-142).

141. The Committee noted with satisfaction that, in its resolution 61/110 of 14 December 2006, the General Assembly had decided to establish a programme within the United Nations to provide universal access to all countries and all relevant regional and international organizations to all types of space-based information and services relevant to disaster management to support the full disaster management cycle. In the same resolution, the Assembly agreed that the programme should be named the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (SPIDER) and that it should be implemented as a programme of the Office for Outer Space Affairs under the overall supervision of the Director of the Office.

142. The Committee welcomed the implementation of the SPIDER programme, highlighting the benefits that such a programme would bring to developing countries, particularly to those countries that suffered frequent disasters and that would benefit from access to, as well as use, space-based solutions for disaster management.

143. The Committee noted that the Office for Outer Space Affairs had presented to the Subcommittee, at its forty-fourth session, a detailed workplan for SPIDER for 2007 and the SPIDER programme for the period 2007-2009.

144. The Committee endorsed the workplan for 2007 and the proposed SPIDER programme for the period 2007-2009 presented by the Office to the Subcommittee in accordance with the request of the General Assembly.

145. The Committee noted that, in accordance with the request of the Scientific and Technical Subcommittee concerning the steps to be included in the implementation of the programme (A/AC.105/890, para. 137), the Office for Outer Space Affairs was working with China and Germany to set up offices in Beijing and Bonn and that those offices would be established shortly. The Committee also noted that the liaison office in Geneva was being set up and that the Office for Outer Space Affairs was coordinating with various partners in the implementation of the activities planned for 2007.

146. Pursuant to the request by the Scientific and Technical Subcommittee (A/AC.105/890, para. 137 (c)), the Office had corresponded with all Member States, inviting them to make cash and in-kind contributions to implement the SPIDER workplan for 2007 and to indicate possible commitments of support for the SPIDER programme for the biennium 2008-2009. The Office informed the Committee that additional Member States had indicated their intention to provide support to implement the SPIDER workplan for the period 2008-2009.

147. Pursuant to the request of the Scientific and Technical Subcommittee (A/AC.105/890, para. 137 (d)), the Office for Outer Space Affairs presented for the consideration of the Committee at its fiftieth session a proposed SPIDER workplan for the period 2008-2009 (A/AC.105/2007/CRP.13) and a SPIDER summary report (A/AC.105/2007/CRP.14).

148. The Committee expressed its appreciation to the Office for the SPIDER summary report and noted that it contained background information on the programme and the main considerations put forward by the ad hoc expert group in its reports, as well as the agreements reached by the Committee at its forty-ninth session and information concerning implementation of General Assembly resolution 61/110. The Committee noted that the summary report also contained the framework for the operation and coordination of the programme,

which would enable SPIDER to take advantage of support and expertise offered by Member States, as well as an outline of the resources required to carry out the SPIDER workplan for the period 2008-2009 and in future years. The Committee agreed that the SPIDER summary report, as amended by the Committee at its fiftieth session, [6] should be translated into all the official languages of the United Nations.

149. The Committee noted that, in preparing the proposed SPIDER workplan for the period 2008-2009, the Office had taken into consideration the SPIDER programme for the period 2007-2009, endorsed by the Subcommittee, the current status of implementation of SPIDER activities for 2007 and the indication of commitments received from Member States for the period 2008-2009. In reviewing the proposed workplan for the period 2008-2009, the Committee agreed that it should include specific target activities for the SPIDER liaison office in Geneva, as well as its proposed activities for 2008 and 2009, as contained in conference room paper A/AC.105/2007/CRP.15. The Committee endorsed the SPIDER workplan for the period 2008-2009, as amended, and agreed that it should be translated into all the official languages of the United Nations.

150. The Committee noted that the Office had indicated that, in order to carry out the activities included in the SPIDER workplan for the period 2008-2009, it would require an annual operating budget of $1.78 million to cover personnel, data processing and information technology equipment, fellowships and grants, printing and publication, operating expenses and official travel, and that approximately two thirds of those resources would be made available by Member States that had already indicated financial and in-kind support for the programme for the biennium 2008-2009. In particular, the Committee noted that the extrabudgetary resources being offered by the Governments of Austria, China, Germany and Switzerland included provisions for professional staff, offices and meeting room space, initial furniture and equipment to establish the SPIDER offices in Beijing and Bonn and the liaison office in Geneva, and to strengthen the Office for Outer Space Affairs in Vienna.

151. The Committee also noted that, in accordance with paragraph 7 of General Assembly resolution 61/110, the Office for Outer Space Affairs had rearranged its priorities within its proposed programme budget for the period 2008-2009 to provide some support for SPIDER activities while minimizing the impact on its other programme activities.

152. The Committee noted that regular budget resources would be required to strengthen the existing capabilities of the Office for Outer Space Affairs to carry out the following elements of the SPIDER programme:

(a) Three programme officers, to be located in Beijing, Bonn and Vienna. Each officer would be responsible for coordinating and implementing activities to be carried out by his or her office and those to be carried out in collaboration with the liaison office in Geneva, as well as coordinating the activities to be carried out in collaboration with the network of regional support offices;

(b) Travel and subsistence allowance for participants in an annual expert meeting of representatives of the network of regional support offices, and a nominal amount for the official travel of staff of the programme.

[6] To be subsequently issued as document A/AC.105/893.

153. The Committee noted that the Secretariat would carry out a thorough review of the programme budget implications of the measures indicated in paragraph 152 above and that a written statement containing the programme budget implications of those measures, without requiring an increase in the total regular budget of the United Nations, would be submitted to the Fourth Committee of the General Assembly at the time of its consideration of the report of the Committee on the Peaceful Uses of Outer Space on its fiftieth session and of the decision of the Fourth Committee in that respect, if necessary.

154. The Committee recalled that, in its resolution 61/110, the General Assembly had agreed that the programme would be supported through voluntary contributions and through a rearrangement of priorities within the framework of the United Nations reform process and, if necessary, a rearrangement of priorities of the Office for Outer Space Affairs and that the additional activities would not, as far as possible, have a negative impact on the current programme activities of the Office and should not result in an increase in the total regular budget of the United Nations.

155. The Committee agreed that progress reports on SPIDER and its future workplans should be considered by the Scientific and Technical Subcommittee under a regular agenda item on space-system-based disaster management support and that the agenda item should be included in the list of issues to be considered by its Working Group of the Whole. The Committee also agreed that the Office should report to the Scientific and Technical Subcommittee, at its forty-fifth session, on the activities carried out by SPIDER in 2007.

156. In the event that SPIDER did not receive all the United Nations regular budget resources requested for 2008-2009, the Office for Outer Space Affairs would prepare and present to the Scientific and Technical Subcommittee, at its forty-fifth session, a reduced workplan based on the workplan for the period 2008-2009 endorsed by the Committee.

157. The Committee requested the Office for Outer Space Affairs to continue to secure further support and in-kind or cash contributions for the implementation of the SPIDER workplan for the period 2008-2009, and to ensure the integration of the contributions offered by the Governments of Austria, China, Germany and Switzerland, as well as the commitments and indications of possible commitment made by Algeria, Argentina, Chile, Colombia, Ecuador, Finland, India, Indonesia, Iran (Islamic Republic of), Italy, Morocco, Nigeria, Romania, the Russian Federation, Saudi Arabia, South Africa, the Syrian Arab Republic and Turkey.

158. Recognizing the central role that the network of regional support offices would have in promoting and carrying out the work of SPIDER at the regional level, the Committee requested that the Office for Outer Space Affairs work on the definition and implementation of the network with the Member States listed as contributors in paragraph 157 above, as well as with other interested Member States. The network would be able to contribute to any of the specific activities included in the workplan for the period 2008-2009 by sharing responsibility for funding and implementing a specific activity jointly and in coordination with SPIDER.

159. The Committee agreed that the acronym of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response should be UN-SPIDER, for its easier recognition as a United Nations programme.

160. Some delegations agreed that the SPIDER programme needed to focus on disasters from a broader perspective, encompassing not only the full disaster management cycle, but also disasters induced by global climate change.

7. Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including, inter alia, in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries

161. The Committee noted that, in accordance with General Assembly resolution 61/111, the Scientific and Technical Subcommittee had considered the agenda item on the geostationary orbit and space communications as a single issue/item for discussion. The Committee took note of the discussion of the Subcommittee under that agenda item, as reflected in the report of the Subcommittee (A/AC.105/890, paras. 159-167).

162. Some delegations reiterated the view that the geostationary orbit was a limited natural resource, which ran the risk of becoming saturated. Those delegations were of the view that, with the participation and cooperation of ITU, the exploitation of the geostationary orbit should be rationalized and made available to all countries, irrespective of their current technical capabilities, thus giving them the opportunity to have access to the geostationary orbit under equitable conditions, taking into account in particular the needs of developing countries and the geographical position of certain countries. Those delegations therefore considered that the item on the geostationary orbit should remain on the agenda of the Subcommittee for further discussion, with the purpose of continuing to analyse its technical and scientific characteristics.

8. International Heliophysical Year 2007

163. The Committee noted that, in accordance with General Assembly resolution 61/111, the Scientific and Technical Subcommittee had considered an agenda item on the International Heliophysical Year 2007, under the three-year workplan adopted at the forty-second session of the Subcommittee (A/AC.105/848, annex I). The Committee took note of the discussion of the Subcommittee under the agenda item, as reflected in the report of the Subcommittee (A/AC.105/890, paras. 143-158).

164. The Committee noted with appreciation that the International Heliophysical Year 2007 was an international endeavour, with States from every region of the world hosting instrument arrays, providing scientific investigators or offering supporting space missions. The Committee also noted that the Year served to focus worldwide attention on the importance of international cooperation in research activities in the field of solar-terrestrial physics.

165. The Committee noted with satisfaction that, as part of the celebration of International Heliophysical Year, the official opening of the International Heliophysical Year 2007 worldwide campaign had taken place during the forty-fourth session of the Scientific and Technical Subcommittee, accompanied by the exhibition on the International Heliophysical Year 2007 at the United Nations Office at Vienna.

166. The Committee noted that, as part of the celebration of the International Heliophysical Year, various activities would be conducted under the coordination of the National Institute of Aeronautics and Space of Indonesia. Those activities included research on solar physics and the relationship between the Earth and the Sun, and public outreach programmes and projects on geomagnetic observation and solar physics carried out in cooperation with other countries.

167. The Committee also noted that, as part of the celebration of International Heliophysical Year, the International School for Young Astronomers had been hosted by Malaysia in March 2007, placing particular focus on solar physics and the solar-terrestrial relationship.

168. The Committee also took note that the third United Nations/European Space Agency/National Aeronautics and Space Administration Workshop on Basic Space Science and the International Heliophysical Year 2007 was to be held in Tokyo from 18 to 22 June. The Workshop was to conduct basic study activities of the heliosphere, interplanetary space and the Earth's atmosphere and magnetosphere and raise awareness of space science in developing countries.

9. Draft provisional agenda for the forty-fifth session of the Scientific and Technical Subcommittee

169. The Committee noted that, in accordance with General Assembly resolution 61/111, the Scientific and Technical Subcommittee had considered proposals for a draft provisional agenda for its forty-fifth session. The Subcommittee had endorsed the recommendations of its Working Group of the Whole concerning the draft provisional agenda for the forty-fifth session of the Subcommittee (A/AC.105/890, paras. 168-171 and annex I).

170. The Committee welcomed the agreement of the Subcommittee on a new approach to scheduling the symposium organized by the Committee on Space Research (COSPAR) and IAF and the industry symposium organized by the Office for Outer Space Affairs aimed at strengthening the partnership with industry (A/AC.105/890, annex I, para. 24).

171. The Committee welcomed the agreement of the Subcommittee that the topic of the 2008 industry symposium should be "Space industry in emerging space nations". The Committee also endorsed the agreement of the Subcommittee that the symposium should be held during the first week of the forty-fifth session of the Subcommittee (A/AC.105/890, annex I, para. 25).

172. On the basis of the deliberations of the Scientific and Technical Subcommittee at its forty-fourth session, the Committee agreed on the following draft provisional agenda for the forty-fifth session of the Subcommittee:

1. General exchange of views and introduction to reports submitted on national activities.
2. United Nations Programme on Space Applications.
3. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).

4. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment.

5. Space debris.

6. Space-system-based disaster management support.

7. Recent developments in global navigation satellite systems.

8. Items to be considered under workplans:

   (a) Use of nuclear power sources in outer space;

   (Work for 2008 as reflected in the multi-year workplan in the report of the Scientific and Technical Subcommittee on its forty-fourth session (A/AC.105/890, annex II, para. 7))

   (b) Near-Earth objects;

   (Work for 2008 as reflected in the multi-year workplan in the report of the Scientific and Technical Subcommittee on its forty-fourth session (A/AC.105/890, annex III, para. 7))

   (c) International Heliophysical Year 2007.

   (Work for 2008 as reflected in the multi-year workplan in the report of the Scientific and Technical Subcommittee on its forty-second session (A/AC.105/848, annex I, para. 22))

9. Single issue/item for discussion: Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries.

10. Draft provisional agenda for the forty-sixth session of the Scientific and Technical Subcommittee, including identification of subjects to be dealt with as single issues/items for discussion or under multi-year workplans.

11. Report to the Committee on the Peaceful Uses of Outer Space.

173. The Committee agreed that the Subcommittee should consider issues related to SPIDER under the regular agenda item on space-system-based disaster management support.

174. The Committee agreed that the Subcommittee should consider issues related to ICG, the latest developments in the field of GNSS and new GNSS applications under the regular agenda item on recent developments in global navigation satellite systems.

175. The Committee endorsed the recommendation that the Subcommittee should reconvene the Working Group of the Whole (A/AC.105/890, annex I, para. 26) and that the Working Group on the Use of Nuclear Power Sources in Outer Space and the Working Group on Near-Earth Objects should reconvene in accordance with their multi-year workplans (A/AC.105/890, annex I, paras. 20 and 21).

D. Report of the Legal Subcommittee on its forty-sixth session

176. The Committee took note with appreciation of the report of the Legal Subcommittee on its forty-sixth session (A/AC.105/891), which contained the results of its deliberations on the items assigned to it by the General Assembly in its resolution 61/111.

177. The Committee expressed its appreciation to Raimundo González Aninat (Chile) for his able leadership during the forty-sixth session of the Subcommittee.

178. At the 571st meeting, on 8 June 2007, the Chairman of the Legal Subcommittee made a statement on the work of the Subcommittee at its forty-sixth session.

179. The representatives of China, Colombia, the Czech Republic, Germany, Greece, India, Italy, Japan, Nigeria, the Republic of Korea, the Russian Federation, South Africa, the United States and Venezuela (Bolivarian Republic of) made statements under the item. During the general exchange of views, statements relating to this item were also made by representatives of other member States.

1. Status and application of the five United Nations treaties on outer space

180. The Committee noted that, in accordance with General Assembly resolution 61/111, the Legal Subcommittee had considered, as a regular item of its agenda, the status and application of the five United Nations treaties on outer space. The Committee took note of the discussion of the Subcommittee under that agenda item, as reflected in the report of the Subcommittee (A/AC.105/891, paras. 32-46).

181. The Committee noted that the Subcommittee had reconvened its Working Group on the Status and Application of the Five United Nations Treaties on Outer Space, under the chairmanship of Vassilios Cassapoglou (Greece), and that the mandate of the Working Group included the status of the United Nations treaties on outer space, review of their implementation and obstacles to their universal acceptance, as well as the promotion of space law, especially through the United Nations Programme on Space Applications (A/AC.105/763 and Corr.1, para. 118) and any new, similar issues that might be raised in discussions in the Working Group, provided that those issues fell within its existing mandate (A/AC.105/787, paras. 138 and 140).

182. The Committee approved the endorsement by the Subcommittee of the report of the Working Group (A/AC.105/891, para. 44 and annex I) and of the recommendation by the Working Group to extend the mandate of the Working Group by one additional year, to 2008. The Committee noted that the Subcommittee had agreed that, at its forty-seventh session, it would review the need to extend the mandate of the Working Group beyond that period.

183. The Committee welcomed the information provided by delegations on the current status of the five United Nations treaties on outer space in their respective States and on the further action that those States intended to take in order to accede to or ratify those treaties. The Committee noted with satisfaction the reports on the progress made by member States in developing their national space law.

184. Some delegations expressed the view that the decision by the Working Group to address the low participation of States in the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (General Assembly

resolution 34/68, annex, the "Moon Agreement") and to gather information from States parties to the Moon Agreement about the benefits of adherence to the Agreement was a welcome addition to the work of the Working Group.

185. Some delegations expressed the view that the working paper submitted by a number of States entitled "Questionnaire on possible options for future development of international space law", to be discussed by the Working Group during the forty-seventh session of the Legal Subcommittee, continued to be of particular interest and could assist the Subcommittee in reaching constructive conclusions about the future orientation of its work.

186. Some delegations expressed the view that the United Nations treaties on outer space had established a comprehensive legal framework that encouraged the exploration of outer space and supported increasingly complex activities in outer space by both government and private entities, with benefits for both space-faring and non-space-faring countries. Those delegations advocated further adherence to the outer space treaties.

187. Other delegations expressed the view that a new, comprehensive convention on space law to further strengthen the international legal regime governing outer space activities was needed to take account of developments in space activities, such as the commercialization of space and the involvement of the private sector, and in order to prevent the militarization of outer space. Those delegations were of the view that a single, comprehensive convention could regulate all aspects of outer space activities.

188. The Committee noted with appreciation that a workshop on space law, hosted by the Government of Ukraine and co-sponsored by the National Space Agency of Ukraine and the International Center for Space Law, had been held in Kyiv from 6 to 9 November 2006.

2. Information on the activities of international intergovernmental and non-governmental organizations relating to space law

189. The Committee noted that, in accordance with General Assembly resolution 61/111, the Legal Subcommittee had considered information on the activities of international intergovernmental and non-governmental organizations relating to space law as a regular item of its agenda. The Committee took note of the discussion of the Subcommittee under that item, as reflected in the report of the Subcommittee (A/AC.105/891, paras. 47-62).

190. The Committee agreed that capacity-building, training and education in space law were of paramount importance to national, regional and international, efforts in the further development of space activities and to promoting knowledge of the legal framework within which space activities were carried out. The Committee endorsed the decision of the Subcommittee to request the Office for Outer Space Affairs to further develop and update the directory of education opportunities in space law, available on the website of the Office (www.unoosa.org), including information on the availability of fellowships for participants from developing countries. The Committee also endorsed the decision of the Subcommittee to request the Office for Outer Space Affairs to continue exploring the possibility of developing a curriculum for a basic course on space law that could be used in particular for the benefit of developing countries by initiating space law studies, as appropriate, in the activities of the regional centres for space science and technology education, affiliated to the United Nations.

3. Matters relating to the definition and delimitation of outer space and the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union

191. The Committee noted that, in accordance with General Assembly resolution 61/111, the Legal Subcommittee had continued to consider, as a regular item of its agenda, matters relating to the definition and delimitation of outer space and the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of ITU. The Committee took note of the discussion of the Subcommittee under that item, as reflected in the report of the Subcommittee (A/AC.105/891, paras. 63-90).

192. The Committee noted the progress made by the Working Group on the Definition and Delimitation of Outer Space, which had been reconvened during the forty-sixth session of the Legal Subcommittee, under the chairmanship of José Monserrat Filho (Brazil). In accordance with the agreement reached by the Legal Subcommittee at its thirty-ninth session, endorsed by the Committee at its forty-third session and subsequently endorsed by the General Assembly in its resolution 61/111, the Working Group was reconvened to consider only matters relating to the definition and delimitation of outer space.

193. The view was expressed that, despite the difficulties in reaching consensus on the question of the definition and delimitation of outer space, member States should continue consultations on the item with a view to maintaining peace and security in outer space and promoting the peaceful use of outer space.

194. The view was expressed that the use of the geostationary orbit, a limited natural resource, should, in addition to being rational, be made available to all countries, irrespective of their current technical capacities, thereby providing them with the possibility of having access to the orbit under equitable conditions, bearing in mind, in particular, the needs and interests of developing countries, as well as the geographical position of certain countries and taking into account the procedures of ITU.

195. Some delegations expressed the view that the geostationary orbit was a limited natural resource with sui generis characteristics that risked saturation and that equitable access to it should therefore be guaranteed for all States, taking into account in particular the needs of developing countries and the geographical position of certain countries.

196. The view was expressed that the geostationary orbit was an integral part of outer space and that its use should be governed by the provisions of the United Nations treaties on outer space.

197. Some delegations expressed the view that the geostationary orbit, which had sui generis characteristics, was an integral part of outer space.

198. Some delegations expressed their satisfaction with the agreement reached by the Subcommittee at its thirty-ninth session (see A/AC.105/738, annex III) to the effect that coordination among countries aimed at the utilization of the geostationary orbit should be carried out in an equitable manner and in conformity with the ITU Constitution and Radio Regulations.

199. The Committee endorsed the decision of the Subcommittee to request the Secretariat to include in future editions of the publication entitled *United Nations Treaties and Principles on Outer Space and Other Related General Assembly Resolutions*[7] both the text of paragraph 4 of General Assembly resolution 55/122 of 8 December 2000, in which the Assembly had endorsed the agreement reached by the Subcommittee at its thirty-ninth session, in 2000, on the question of the character and utilization of the geostationary orbit, and the paper entitled "Some aspects concerning the use of the geostationary orbit", annexed to the report of the Subcommittee on its thirty-ninth session (A/AC.105/738, annex III). The Committee also endorsed the decision of the Subcommittee to request the Secretariat to include Assembly resolution 1721 A (XVI) of 20 December 1961 in that publication.

200. Some delegations expressed the view that, as the issue of the definition and delimitation of outer space and the character and utilization of the geostationary orbit was of crucial importance, the item should be retained on the agenda of the Subcommittee.

4. Review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space

201. The Committee noted that, in accordance with General Assembly resolution 61/111, the Legal Subcommittee had continued its consideration of the review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space (Assembly resolution 47/68) as a single issue/item for discussion.

202. The view was expressed that a revision of the Principles was not warranted.

203. The Committee noted that an exchange of views had taken place in the Legal Subcommittee on the review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space, as reflected in the report of the Subcommittee (A/AC.105/891, paras. 91-100), in which reference was made to the work currently being undertaken by the Scientific and Technical Subcommittee under the item entitled "Use of nuclear power sources in outer space".

5. Examination and review of the developments concerning the draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment

204. The Committee noted that, in accordance with General Assembly resolution 61/111, the Legal Subcommittee had considered a single issue/item for discussion entitled "Examination and review of the developments concerning the draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment". The Committee took note of the discussion of the Subcommittee under that item, as reflected in the report of the Subcommittee (A/AC.105/891, paras. 101-118).

205. The Committee noted the comprehensive report made by the observer for the International Institute for the Unification of Private Law (Unidroit) on developments concerning the draft space assets protocol and the priority status that had been given to completing the work on the draft space assets protocol. The Committee further noted that every effort was being made by Unidroit to reconvene

[7] United Nations publication, Sales No. E.05.I.90.

the Unidroit committee of governmental experts for its third session by the end of 2007 and that consultations to advance progress on outstanding issues would continue on 19 and 20 June 2007 in New York.

206. Some delegations expressed their support for the progress being made on the protocols to the Convention on International Interests in Mobile Equipment and looked forward with great interest to the continuation and successful completion of the work on the draft space assets protocol. Those delegations welcomed the agreement by the Legal Subcommittee to continue examination of this agenda item at its forty-seventh session, in 2008.

207. The view was expressed that the complex issues that remained outstanding needed to be addressed in a balanced manner. That delegation further expressed the view that the established international legal regime governing outer space, as well as national legislation on space assets and activities, should constitute the mandatory framework within which private transactions should develop and flourish.

208. The view was expressed that a thorough analysis needed to be undertaken of the compatibility between the private law and the public international law implications of the future protocol, paying careful attention to the possible contradictions and conflicts that might arise in practice. That delegation further expressed the view that, with regard to the relationship between the future protocol and the legal regime governing outer space, the principles of public international law contained in the outer space treaties should prevail.

6. Practice of States and international organizations in registering space objects

209. The Committee noted that, in accordance with General Assembly resolution 61/111, the Legal Subcommittee had considered the practice of States and international organizations in registering space objects in accordance with the workplan adopted by the Committee at its forty-sixth session. The Committee took note of the discussion of the Subcommittee under that agenda item, as reflected in the report of the Subcommittee (A/AC.105/891, paras. 119-132).

210. The Committee noted that the Subcommittee had reconvened its Working Group on the Practice of States and International Organizations in Registering Space Objects, under the chairmanship of Kai-Uwe Schrogl (Germany). The Committee also noted that the Subcommittee had endorsed the report of the Working Group, which is contained in annex III to its report, including the elements of conclusions of the Working Group, contained in the appendix to annex III.

211. The Committee noted that the Subcommittee had agreed that the appendix to the report of the Working Group, contained in annex III, together with the first six preambular paragraphs contained in paragraph 18 of the working paper submitted by the Chairman of the Working Group (A/AC.105/C.2/L.266), constituted the basis for a draft resolution for submission to the General Assembly, to be agreed upon at the fiftieth session of the Committee.

212. The Committee expressed its satisfaction with the work carried out by the Working Group during the period 2005-2007. In particular, the Committee expressed its appreciation to the Chairman of the Working Group for his productive leadership, which had led to the results achieved by the Working Group.

213. The Committee was of the view that the elements of conclusions of the Working Group provided an important incentive for enhancing adherence to the Convention on Registration of Objects Launched into Outer Space (General

Assembly resolution 3235 (XXIX), annex) and for establishing common practices for States and international organizations to follow in registering space objects.

214. The Committee had before it a compilation of the first six preambular paragraphs and the elements of conclusions of the Working Group (A/AC.105/2007/CRP.5).

215. The Committee endorsed the first six preambular paragraphs and the elements of conclusions of the Working Group and requested the Secretariat to prepare a draft resolution for submission by France to the General Assembly at its sixty-second session, in 2007.

7. Draft provisional agenda for the forty-seventh session of the Legal Subcommittee

216. The Committee noted that, in accordance with General Assembly resolution 61/111, the Legal Subcommittee had considered an item entitled "Proposals to the Committee on the Peaceful Uses of Outer Space for new items to be considered by the Legal Subcommittee at its forty-seventh session".

217. The Committee noted that an exchange of views on the basis of informal consultations coordinated by Vladimir Kopal (Czech Republic) had taken place in the Legal Subcommittee on proposals by member States for new items to be included in the agenda of the Subcommittee and that agreement had been reached on a proposal, to be submitted to the Committee, for the draft provisional agenda for the forty-seventh session of the Subcommittee, in 2008, as reflected in the report of the Subcommittee (A/AC.105/891, paras. 133-143).

218. The Committee welcomed the agreement by the Subcommittee to include as a new single issue/item on the agenda of the Subcommittee at its forty-seventh session, in 2008, "Capacity-building in space law", proposed by South Africa. The Committee noted that the deliberations under that item would be aimed at promoting cooperation with and providing assistance to developing countries and agreed that the Subcommittee should review the possibility of extending that item beyond the forty-seventh session.

219. The Committee welcomed the agreement by the Subcommittee to include "General exchange of information on national legislation relevant to the peaceful exploration and use of outer space", proposed by the United States, as an item under the following four-year workplan:

2008 Request to Member States for national legislation relating to governmental and non-governmental space activities. Presentations by Member States of reports on their national legislation

2009 Examination, in a working group, of the responses received in order to develop an understanding of the manner in which Member States have regulated governmental and non-governmental space activities

2010 Working group continues to examine responses received and begins drafting its report, including conclusions

2011 Working group finalizes report to the Legal Subcommittee

The Committee welcomed the agreement by the Subcommittee that a working group should be established to consider that item in 2009, 2010 and 2011.

220. The Committee welcomed the agreement by the Subcommittee to invite the International Institute of Space Law and the European Centre for Space Law of ESA to organize a symposium with the theme "Legal implications of space applications for global climate change", to be held during the afternoon meetings on the first and second day of its forty-seventh session, in 2008. The Committee noted that the agreement by the Subcommittee was made with the aim of possibly including it as a single issue/item of the agenda of its forty-eighth session, in 2009.

221. On the basis of the deliberations of the Legal Subcommittee at its forty-sixth session, the Committee agreed on the following draft provisional agenda for the forty-seventh session of the Subcommittee, in 2008:

Regular items

1. Opening of the session, election of the Chairman and adoption of the agenda.
2. Statement by the Chairman.
3. General exchange of views.
4. Status and application of the five United Nations treaties on outer space.
5. Information on the activities of international intergovernmental and non-governmental organizations relating to space law.
6. Matters relating to:
   (a) The definition and delimitation of outer space;
   (b) The character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union.

Single issues/items for discussion

7. Review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space.
8. Examination and review of the developments concerning the draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment.
9. Capacity-building in space law.

Items considered under workplans

10. General exchange of information on national legislation relevant to the peaceful exploration and use of outer space.

    2008: Request to Member States for national legislation relating to governmental and non-governmental space activities. Presentations by Member States of reports on their national legislation.

New items

11. Proposals to the Committee on the Peaceful Uses of Outer Space for new items to be considered by the Legal Subcommittee at its forty-eighth session.

222. The Committee endorsed the decision of the Subcommittee to reconvene at its forty-seventh session the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space and the Working Group on Matters Relating to the Definition and Delimitation of Outer Space (A/AC.105/891, para. 139).

223. The Committee agreed that the Subcommittee, at its forty-seventh session, should review the need to extend the mandate of the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space beyond that session of the Subcommittee (A/AC.105/891, para. 140).

E. Spin-off benefits of space technology: review of current status

224. In accordance with paragraph 43 of General Assembly resolution 61/111 of 14 December 2006, the Committee resumed its consideration of the item entitled "Spin-off benefits of space technology: review of current status".

225. The representatives of Italy, Japan, Thailand, Ukraine and the United States made statements under this item.

226. The Committee heard a presentation entitled "Intersputnik as provider of state-of-the-art satellite communications services", by Victor Veshchunov (Intersputnik).

227. The publication *Spinoff 2006*, submitted by the National Aeronautics and Space Administration (NASA) of the United States, was made available to the Committee.

228. The Committee noted that IAA and the National Space Agency of Ukraine, together with the Yuzhnoye State Design Office, the State Enterprise Production Association Yuzhny Machine-Building Plant and the National Youth Aerospace Education Center, all of Ukraine, had held a conference on advanced space technologies for the prosperity of humankind, dedicated to the fiftieth anniversary of the space age, in Dnipropetrovsk, Ukraine, from 18 to 20 April 2007. The conference had been attended by more than 300 participants from all over the world and had addressed, among other issues, the contribution that space technologies could make to resolving the challenges facing humankind. The Committee also noted the intention of the co-organizers to hold a second, similar conference in 2009.

229. The Committee agreed that spin-offs of space technology should be promoted because they advanced economies through the production of innovative technologies, thereby contributing to improving the quality of life of human populations.

230. The Committee also agreed that spin-offs of space technology represented a powerful engine for technological innovation and growth in both the industrial and service sectors and could be beneficially applied to social and humanitarian ends.

231. The view was expressed that space technology and its spin-off benefits must be used for peaceful purposes in order to improve the quality of life of populations, meet the goals of the United Nations Millennium Declaration (General Assembly

resolution 55/2),[8] manage limited natural resources, help solve environmental problems such as global warming, as well as prevent and mitigate natural disasters.

232. The Committee noted that, in the industrial sector, space technology was being used to create a variety of different commercial products, such as those used for the maintenance of ship bilges and for cleaning and containing areas contaminated by oil products.

233. In the area of water management, the Committee noted that a system had been designed to sustain the astronauts living on the International Space Station and was being used to turn waste water from respiration, sweat and other sources into potable water. The Committee also noted that a water purification system had been developed for the desalination of seawater and the elimination of viruses.

F. Space and society

234. In accordance with paragraph 44 of General Assembly resolution 6/111, the Committee continued to consider, under the agenda item entitled "Space and society", the special theme for the focus of discussions for the period 2004-2006, entitled "Space and education", in accordance with the workplan adopted by the Committee at its forty-sixth session,[9] in 2003.

235. The Committee recalled that, in accordance with the workplan, it would take the following actions at its current session: (a) develop specific, concrete action plans for incorporating outer space into education, enhancing education in space, expanding space tools for education and ensuring that space-based services contribute to the achievement of the Millennium Development Goal on access to education; and (b) prepare a brief document on the role of space in education, as well as the link between space and education, for transmission to the General Conference of UNESCO.

236. The representatives of Canada, Chile, China, Colombia, the Czech Republic, Ecuador, France, Greece, India, Indonesia, Japan, Malaysia, Nigeria, the Republic of Korea and the United States made statements under this item. The observer for Bolivia also made a statement. Statements were also made by the observers for ITU and UNESCO.

237. The Committee heard the following presentations:

(a) "A new paradigm in geographic education: *The European Space Agency School Atlas: Geography from Space*", by L. Beckel (Austria);

(b) "Space education without borders", by M. Kukla (SGAC);

(c) "Use of space-based systems for education in India", by D. Radhakrishnan (India);

(d) "Enhancing human development through space education: attempts by JAXA Space Education Center", by T. Chiku (Japan Aerospace Exploration Agency (JAXA));

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[8] See A/56/326, annex, and A/58/323, annex.

[9] *Official Records of the General Assembly, Fifty-eighth Session, Supplement No. 20* (A/58/20), para. 239; and ibid., *Sixty-first Session, Supplement No. 20* (A/61/20 and Corr.1), paras. 245 and 260.

(e) "Space image atlas of the Kingdom of Saudi Arabia: a new way of education for sustainable development", by A. AL AlShaikh (Saudi Arabia);

(f) "Civil society and outer space", by P. Lillie (on behalf of ESPI);

(g) "Space in the twenty-first century: a challenge for international governance", by J. M. Logsdon (United States).

238. The Committee noted that the Space Education Programme of UNESCO was aimed at enhancing space subjects and disciplines in schools and universities, in particular in developing countries, and raising awareness among the general public of the benefits of space technology for social, economic and cultural development. The Committee noted that UNESCO was the lead United Nations agency for the United Nations Decade of Education for Sustainable Development (2005-2014).

239. The Committee noted that there were a number of national educational initiatives and activities aimed at using content, materials and applications unique to space activities for training students and teachers and for educating the general public on matters relating to outer space, which included the initiatives and activities of the Malaysian Angkasawan and space awareness programmes; those of the Centre national d'études spatiales (CNES) of France; the JAXA Space Education Center; NASRDA and the Centre for Space Science and Technology Education, both of Nigeria; and the NASA Educator Astronaut Program, Explorer Schools Program and Explorer Institutes initiative; as well as the education programmes implemented by the National Oceanic and Atmospheric Administration (NOAA) of the United States; and by the Korea Aerospace Research Institute (KARI).

240. The Committee noted the educational opportunities being provided by some national universities, including hands-on training opportunities for university and graduate students in space science and engineering. In that regard, the Committee noted the activities undertaken through the International Space Education Board (ISEB), a joint initiative of the Canadian Space Agency, ESA, JAXA and NASA launched in 2005, and the University Space Engineering Consortium (UNISEC).

241. The Committee noted that a number of national tele-education initiatives were providing educators and students at all levels, including those in remote areas, with high-quality education consisting of the latest teaching resources, vocational and teacher training and adult education.

242. The Committee noted the activities at the regional level for capacity-building through education and training in space science and technology applications for sustainable development, including the achievements of the African Regional Centre for Space Science and Technology Education—in English Language (ARCSSTE-E), the Asia-Pacific Regional Space Agency Forum (APRSAF) and the pro tempore secretariat of the Fifth Space Conference of the Americas.

243. The Committee noted with satisfaction that, at the global level, a large number of educational and outreach activities and programmes for children, young people and the general public were being established by space agencies and international organizations to promote awareness of the benefits of space science and technology and to encourage children to consider careers in the fields of mathematics and science.

244. The Committee noted the role played by the International Space Station in education and in reaching out to education communities worldwide.

245. The Committee noted that World Space Week, observed from 4 to 10 October each year pursuant to General Assembly resolution 54/68 of 6 December 1999, contributed to the development of education and raised awareness about outer space, in particular among young people and the general public. The Committee noted that more than 50 countries had participated in World Space Week in 2006 and that the theme of the activities for 2006 had been "Space for saving lives".

246. The Committee was of the view that sharing scientific and technical knowledge and achievements in the field of space activities would have a positive impact on future generations.

247. The view was expressed that illiteracy and a lack of adequate education continued to constitute major problems for developing countries and that the United Nations Programme on Space Applications should place more emphasis on supporting education and training for capacity-building in developing countries and on strengthening international cooperation.

248. The view was expressed that States should be encouraged to improve the dissemination of space-related educational materials in order to increase general awareness of the importance of the use of space technology for attaining sustainable development.

249. The Committee noted with interest the proposal that it could address specific issues related to the theme of space and education at its future sessions, either as special themes to be considered under the agenda item entitled "Space and society" or through its symposiums, and that, in order to meet the objective of the workplan for 2006 to develop specific, concrete action plans for incorporating space into education, it could consider compiling information on successful activities and initiatives of member States and international entities in enhancing space education, to be published either online or as a brochure.

250. The Committee also noted the request that it support the proposal to proclaim 2009 International Year of Astronomy, which is to be considered by the General Assembly at its sixty-second session, and the proposal to consider, under the agenda item on "Space and society", the theme entitled "Astronomy for 2008-2009".

251. The Committee requested the Office for Outer Space Affairs to prepare a presentation on its education and capacity-building programme, to be delivered to the Committee at its fifty-first session, in 2008.

252. The Committee noted with appreciation that Lothar Beckel (Austria) had provided each delegation with the *European Space Agency School Atlas: Geography from Space*.

253. The Committee agreed that, in view of the importance of space and education, it would continue to consider the special theme at its fifty-first session, in 2008.

G. Space and water

254. In accordance with paragraph 45 of General Assembly resolution 61/111, the Committee continued its consideration of the agenda item entitled "Space and water".

255. The representatives of Canada, Chile, China, India, Japan, Saudi Arabia and the United States made statements under the item.

256. The Committee heard the following technical presentations under the item:

(a) "Experience of the General Organization of Remote Sensing (GORS)", by Osama Ammar and Marwan Koudmari (Syrian Arab Republic);

(b) "Enhanced flood prediction based on a mobile GNSS application", by Holger Sdunnus (Germany).

257. The Committee welcomed the consideration of the item and agreed that it was timely in view of numerous discoveries and the prospects for future developments in the area of the use of space technology for water resources management. The Committee agreed that the current challenge in using space applications for addressing water-related issues was to ensure that the expanding body of valuable scientific data was made readily available and converted into practical information that could be used by decision makers and policymakers. In that context, the Committee noted with satisfaction that the symposium on the theme "Space and water", organized by the Office for Outer Space Affairs in cooperation with the European Academy of Sciences and Arts and held during the fiftieth session of the Committee, had addressed the role of space technology applications in dealing with global challenges to global water resources and discussed the strategies and methods most likely to ensure wider access to a sustainable supply of safe and clean water, with a view to providing decision makers with space-derived tools to achieve a sustainable use of water.

258. The Committee noted that acute water shortages and floods were serious barriers to the social and economic development of developing countries and were of major concern to various countries because they resulted in destruction of property and loss of life. The Committee agreed that access to a sustainable supply of drinking water had always been a basic need of humankind and that it continued to constitute a daily challenge. The Committee also noted that water-related challenges could lead to social, economic and political tensions and that no comprehensive consideration of socio-economic or environmental development was possible without considering the issue of water resources.

259. The Committee noted a number of national and international projects related to water resources management that were aimed at, among other things, mapping wastelands; monitoring bodies of surface water, groundwater prospects, watershed and water quality; estimating crop production; developing aquaculture in coastal areas; managing water-related disasters; and assessing the impact of global warming on water resources. In that connection, the Committee noted with satisfaction the increasing cooperation among member States in the use of space-derived data for water resources management that involved, among others, international projects such as the Famine Early Warning Systems Network (FEWS NET), the Aqua mission, the Global Precipitation Measurement (GPM) mission, the Landsat land remote sensing satellites, Sentinel-Asia, the ESA Terrestrial Initiative of Global Environmental Research (TIGER) and the Tropical Rainfall Measuring Mission (TRMM).

260. The Committee noted that space applications could significantly contribute to cost-effective water resources management, as well as to the prediction and mitigation of water-related emergencies. The Committee also noted that it was difficult to fully understand the global water cycle only through in situ observation networks, which were non-existent in some countries, deteriorating in others, and extremely costly to augment. In that context, the Committee was of the view that

satellites offered an alternative means of observing the Earth and were therefore essential for gathering information on water resources in remote places.

261. The Committee noted with satisfaction that space-based observations of oceans provided information for seasonal climate forecasting and, in relation to the El Niño and La Niña phenomena, the forecasting of hydrological extremes such as floods, droughts and intense thunderstorms. The Committee also noted that space-derived observations had been used in rapid response to the flood disasters that had taken place in Thailand in May 2006 and in Indonesia in February 2007.

262. The Committee noted that consideration of the item on space and water promoted capacity-building in the use of space applications for water resources management and that a number of research and capacity-building activities in that area were being carried out by various national and international entities. In that context, the Committee noted with satisfaction that the United Nations/International Astronautical Federation Workshop on the Use of Space Technology for Water Resources Management had been held in Valencia, Spain, on 29 and 30 September 2006.

263. The Committee noted with appreciation that the Crown Prince of Saudi Arabia had announced the third award of the Prince Sultan Bin Abdulaziz international prize for water for special achievements and scientific innovations in the area of water resources management for the period 2006-2008. The Committee noted the invitation of the Government of Saudi Arabia to nominate for the third award innovative projects carried out in the area of water resources management.

264. The Committee agreed to continue its consideration of the item at its fifty-first session, in 2008.

H. International cooperation in promoting the use of space-derived geospatial data for sustainable development

265. In accordance with the agreement reached by the Committee at its forty-ninth session and endorsed by the General Assembly in paragraph 48 of its resolution 61/111, the Committee considered this item under a multi-year workplan. According to the workplan, at its fiftieth session the Committee would hear presentations by member States and observers, regional and international organizations and informal coordination groups, such as the regional centres for space science and technology education, affiliated to the United Nations, the secretariat of GEO, CEOS, UNESCO and the Food and Agriculture Organization of the United Nations, on their respective activities related to space-derived geospatial information for sustainable development.

266. The Committee also noted the agreement reached at its forty-ninth session that in 2007 it would identify and assess the interfaces among existing international forums in which countries undertook discussions regarding the implementation of space-derived geospatial data infrastructures, in order to avoid duplication of international cooperative efforts. On the basis of that assessment, the Committee would then take a decision on the next steps in the workplan, including more closely defining the scope of the agenda item on space-derived geospatial information.

267. The representatives of Brazil, Canada, Chile, Greece, Japan, Nigeria, the Syrian Arab Republic and the United States made statements under the item. Statements were also made by the representative of UNESCO, as the Chairman of

the United Nations Inter-Agency Meeting on Outer Space Activities at its twenty-seventh session, and by the representative of CEOS. The representative of the secretariat of GEO also made a statement.

268. Under the item, the Committee heard a presentation entitled "Use of space-derived geospatial data for sustainable development", by K. Radhakrishnan (India).

269. The Committee noted that a number of national, regional and global initiatives, including activities under the framework of GEO, were addressing issues related to the use of space-derived geospatial data for sustainable development.

270. The Committee took note of the report of the Chairman of the United Nations Inter-Agency Meeting on Outer Space Activities on the half-day informal open session of the Inter-Agency Meeting, which had been held on 19 January 2007. The open informal session had addressed the theme "The use of space-derived geospatial data for sustainable development in the United Nations system", which had been agreed upon by the focal points of the Inter-Agency Meeting in view of the new item on space-derived geospatial data for sustainable development on the agenda of the Committee.

271. The Committee noted that representatives from 13 United Nations entities and 29 member States, including the Chairman of the Committee, had exchanged views on the use of space-derived geospatial data for sustainable development in the United Nations system. Presentations had been made by the representatives of the Office for Outer Space Affairs, the Office of the United Nations High Commissioner for Refugees (UNHCR), the World Health Organization, the Office for the Coordination of Humanitarian Affairs and the UNITAR Operational Satellite Applications Programme (UNOSAT). Presentations had also been made on ICG by a representative of ICG and on SPIDER by representatives of the Office for Outer Space Affairs and the German Aerospace Centre. Both initiatives were related to activities relevant to the use of space-derived geospatial data. The presentations made at the open informal session are available from the website dedicated to the coordination of outer space activities within the United Nations system (www.uncosa.unvienna.org).

272. The Committee noted the plans to establish a United Nations spatial data infrastructure. A compendium of and a strategy implementation paper on spatial data infrastructure had been developed and were available at http://www.ungiwg.org/unsdi.htm.

273. The Committee noted with satisfaction that the informal open session had provided an excellent overview of the extent to which space-derived geospatial data were already being used by a large number of United Nations organizations and had demonstrated the huge potential of such data relevant to a broad range of activities of the United Nations system.

274. The Committee noted the activities of the Working Group on Information Systems and Services of CEOS and its efforts to enhance international collaboration, as well as to advocate and promote technologies that enabled the search of and access to the data and services needed to support scientists, application providers and decision makers.

275. The Committee noted the significant societal benefits of using timely and high-quality space-derived geospatial data for sustainable development in

application areas such as agriculture, deforestation assessment, disaster monitoring, drought relief and land management.

276. The view was expressed that there was a "knowledge gap" when extracting information from images. The capacity to build sophisticated Earth observation satellites was not matched by the means to extract useful information from those data sources. Spatial data were therefore not exploited to the fullest extent possible.

277. The view was expressed that global open data access policies and global outreach policies were within the areas of action of the Committee and could contribute to addressing that deficiency. Global open data access policies could be implemented through a global consortium of land imaging satellites, which would provide data access to a constellation of satellites free of charge to all countries.

278. The view was expressed that there were existing satellite programmes with data policies that could act as examples for such a consortium; however there was a need for a global forum, such as the Committee, in which the issues could be discussed on an equitable basis. The Committee's role should not be limited to data policies, but should also address capacity-building in the use of space-based geospatial data.

279. The view was expressed that open-source software to address the information needs of developing countries was key to bridging the digital divide. Open-source software in combination with open data access policies would promote the use of geospatial data for sustainable development.

280. The view was expressed that, in order to avoid duplication of efforts, the Committee, within its current mandate, would have to take into account the activities of existing organizations, as well as ongoing activities in the field of international cooperation in the use of geospatial data. Numerous examples of ongoing bilateral, regional and international cooperation initiatives in that field had been noted by the Committee, many of which had been fruitful and were promoting the increased use of geospatial data. That delegation was also of the view that the Committee would have to take into consideration the balance between commitments for the provision of open access to data and the foreign policy, national sovereignty and security interests of countries.

281. The Committee noted that at its fifty-first session, in accordance with the multi-year workplan agreed at its forty-ninth session, it would invite expert presentations on experiences in the establishment of appropriate national infrastructure for space-derived geospatial data collection, processing and application, including human resource training, technical infrastructure and financial requirements, and institutional arrangements. The Committee also recalled its understanding reached at the forty-ninth session that the workplan could be revised as necessary for 2009 at the Committee's fifty-second session.

I. Other matters

282. The representatives of Algeria, Brazil, Burkina Faso, Canada, Chile, China, Colombia, the Czech Republic, Cuba, Ecuador, France, Greece, India, Japan, the Libyan Arab Jamahiriya, Nigeria, the Russian Federation, the Syrian Arab Republic, the United Kingdom, the United States and Venezuela (Bolivarian Republic of) made statements under this item. During the general exchange of views, statements relating to this item were also made by representatives of other member States. The

observers for Bolivia and Switzerland, as well as the observers for the AOCRS and SWF also made statements.

1. Report of the Office of Internal Oversight Services

283. The Committee took note of the report of the Office of Internal Oversight Services on the inspection of programme management and administrative practices in the Office for Outer Space Affairs (A/AC.105/2007/CRP.3).

284. The Committee noted that this had been the first time an inspection of the Office for Outer Space Affairs had been carried out and that the Office of Internal Oversight Services had concluded that the Office for Outer Space Affairs was well run, cohesive and productive and that it was performing better than was the average programme in the United Nations Secretariat. The Committee also noted that the report of the Office of Internal Oversight Services outlined 11 recommendations aimed at further improving the efficient and effective work of the Office for Outer Space Affairs.

285. The Committee commended the Office for Outer Space Affairs and its staff on the excellent evaluation.

2. Composition of the bureaux of the Committee and its subsidiary bodies for the period 2008-2009

286. The Committee noted that the General Assembly, in its resolution 61/111, had endorsed the composition of the bureaux of the Committee and its subsidiary bodies for the period 2008-2009, and had agreed that the Committee and its subcommittees should elect their officers at their respective sessions in 2008.

287. The Committee noted that Ciro Arévalo Yepes (Colombia), Suvit Vibulsresth (Thailand) and Filipe Duarte Santos (Portugal) would be elected to the offices of Chairman, First Vice-Chairman and Second Vice-Chairman/Rapporteur of the Committee on the Peaceful Uses of Outer Space respectively, that Aboubekr Seddik Kedjar (Algeria) would be elected to the office of Chairman of the Scientific and Technical Subcommittee and that Vladimir Kopal (Czech Republic) would be elected to the office of Chairman of the Legal Subcommittee for the period 2008-2009.

3. Future role and activities of the Committee

288. The Committee recalled that, at its forty-eighth session, in 2005, the Chairman of the Scientific and Technical Subcommittee for the period 2001-2003, Karl Doetsch (Canada), had made a special presentation entitled "Observations on activity of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space". The Committee further recalled that, at the same session and on the basis of that presentation, the Chairman of the Committee for the period 2004-2005, Adigun Ade Abiodun (Nigeria), had prepared a non-paper entitled "Planning for future roles and activities of the Committee", for consideration by the Committee. The Committee also recalled that, at its request, a working paper had been prepared by the Secretariat entitled "Future role and activities of the Committee on the Peaceful Uses of Outer Space" (A/AC.105/L.265), which had summarized the presentation, the non-paper and the discussion that had taken place in the Committee on this matter at its forty-eighth session, and had provided substantive elements for consideration by the Committee.

289. The Committee recalled that in paragraph 47 of General Assembly resolution 61/111, the Assembly had noted with satisfaction that the Committee had agreed to consider, at its fiftieth session, under its agenda item entitled "Other matters", the issue of the future role and activities of the Committee, and noted that the Chairman of the Committee for the period 2006-2007, Gerard Brachet (France), could conduct intersessional, open-ended informal consultations with a view to presenting to the Committee a list of elements that could be taken into consideration at its subsequent session.

290. The Committee had before it a working paper submitted by the Chairman of the Committee, entitled "Future role and activities of the Committee on the Peaceful Uses of Outer Space" (A/AC.105/L.268 and Corr.1). At the 576th meeting, on 13 June, the Chairman of the Committee introduced the main elements of the working paper.

291. The Committee agreed that the working paper provided a good basis for further consideration of a topic of great relevance to the future work of the Committee and expressed its appreciation to the Chairman for his efforts in addressing the broader perspective of the work of the Committee.

292. Some delegations expressed the view that, in considering the future role and activities of the Committee, it was important to safeguard the position of the Committee as an important forum for the international community, in particular its function in providing a platform at the global level for consideration of the role of space technology and its applications for the benefit of developing countries.

293. Some delegations expressed the view that it would be particularly important for the benefits of the use of space technology and its applications to be linked more closely to international development goals. Those delegations were of the view that there was a need for a closer examination of the links between the work of the Committee and the work carried out by the United Nations bodies responsible for implementing plans of action of global conferences and summits, in particular the United Nations Development Programme (UNDP), and that the Committee should provide UNDP with elements regarding the role of space-based tools in addressing the challenges to human development, for inclusion in its report on development.

294. Some delegations expressed the view that there was a need to strike a balance between the future role of the Scientific and Technical Subcommittee and that of the Legal Subcommittee. Those delegations were of the view that a number of the initiatives presented in the working paper would benefit from the closer involvement of the Legal Subcommittee.

295. The Committee agreed that the Director of the secretariat of GEO should be invited to report on a regular basis to the Scientific and Technical Subcommittee on progress made in the implementation of the 10-Year Implementation Plan of GEOSS and that the Chairman of ICG should be invited to report on a regular basis to the Scientific and Technical Subcommittee on the activities of ICG.

296. The view was expressed that, with regard to the proposal to invite the Chairman of ICG to report to the Scientific and Technical Subcommittee on delivery of global satellite navigation services, the Legal Subcommittee should also be briefed.

297. Some delegations expressed the view that it was not appropriate for the Legal Subcommittee to consider the work of ICG because the terms of reference of ICG did not include legal matters.

298. The view was expressed that a possible future working group of the Scientific and Technical Subcommittee to address the concept of rules of the road for future space operations should also establish cooperative links with the Legal Subcommittee.

299. The view was expressed that a new item should be added to the agenda of the Committee, dealing with the use of space technology within the United Nations system. That delegation noted that that item could be addressed on an annual or biennial basis with a view to establishing a fuller understanding of how United Nations programmes and specialized agencies used space technology to fulfil their respective mandates.

300. Some delegations expressed the view that, since the Moon Agreement already envisaged the possibility of designating some areas of the Moon and other celestial bodies as international scientific preserves for which special protection arrangements were to be agreed, and since the issue of passenger space transport would require a thorough analysis to be carried out of the related legal aspects, it was desirable for the Legal Subcommittee to consider this issue and for non-governmental organizations working in the legal field to be invited to contribute to that work.

301. The view was expressed that the issue of protection and conservation of designated areas on the Moon and other celestial bodies needed to include, in particular, the impact of the presence of humans on the Moon.

302. Some delegations expressed the view that the High-level Panel on Space Exploration, held during the session, had provided insights into the cooperative exploration efforts of relevance to both space-faring and non-space-faring countries that could contribute to the consideration of the future role and activities of the Committee.

303. Some delegations expressed the view that it was important to pay particular attention to the needs of developing countries for capacity-building and training. The consideration of the future role and activities of the Committee would therefore benefit from the work carried out under current items on the agenda of the Committee, such as the item on space and society.

304. The view was expressed that, among the future activities of the Committee, the set of safety regulations associated with the use of nuclear power sources in outer space was of special importance. That delegation stressed that the use of that type of energy was not acceptable in space programmes in near-Earth orbit.

305. The Committee agreed that some of the issues addressed in the working paper, in particular those of the long-term sustainability of space activities, protection and conservation of designated areas of the Moon and other celestial bodies, and issues related to the development of passenger space transport, would benefit from further analysis by relevant international organizations. The Committee agreed that relevant organizations should be identified and invited to report to the Committee based on criteria to be developed.

306. The Committee agreed that, at its fifty-first session, in 2008, and in the margin of the forty-fifth session of its Scientific and Technical Subcommittee and of the forty-seventh session of its Legal Subcommittee, consideration of the future role and activities of the Committee should be continued.

4. Membership of the Committee

307. The Committee noted the applications of Bolivia and Switzerland for membership of the Committee (see A/AC.105/2007/CRP.12 and A/AC.105/2007/CRP.7).

308. The Committee agreed to recommend to the General Assembly at its sixty-second session, in 2007, that Bolivia and Switzerland should become members of the Committee.

5. Observer status

309. The Committee noted that two intergovernmental organizations, AOCRS and the European Organisation for Astronomical Research in the Southern Hemisphere, and one non-governmental organization, SWF, had applied for observer status with the Committee and that the related correspondence and statutes of those organizations had been made available during the current session of the Committee (see A/AC.105/2007/CRP.9, A/AC.105/2007/CRP.8 and A/AC.105/2007/CRP.10).

310. The Committee decided to recommend the granting of permanent observer status to AOCRS.

311. While the Committee noted the interest of the European Organisation for Astronomical Research in the Southern Hemisphere, it decided not to recommend the granting of permanent observer status to that organization as it had not been present at the fiftieth session of the Committee to respond to the questions of members of the Committee. The Secretariat was requested to inform the European Organisation for Astronomical Research of the Committee's decision.

312. The Committee agreed that a final decision on the application of SWF for permanent observer status should be postponed to its fifty-first session in 2008. SWF was invited to participate as an observer at the forty-fifth session of the Scientific and Technical Subcommittee, the forty-seventh session of the Legal Subcommittee and the fifty-first session of the Committee. The Committee requested the Secretariat to inform SWF of its decision.

313. The view was expressed that SWF was a rather young organization and that the Committee should better acquaint itself with the organization's activities before taking a decision on granting it permanent observer status.

314. Some delegations expressed the view that, in granting permanent observer status, the guidelines established by the Committee at its thirty-third session, in 1990, should be applied equally. Those delegations were of the view that private sector organizations could provide new avenues for cooperation, in particular with developing countries.

315. Some delegations expressed the view that the guidelines applying to granting permanent observer status adopted by the Committee should be honoured and strictly abided by.

316. The view was expressed that the rules applying to granting permanent observer status needed to be reviewed in view of the fact that the framework in which space activities were taking place had considerably changed since the Committee's thirty-third session.

6. Symposium

317. As agreed during the forty-ninth session of the Committee, a symposium entitled "Space and water" was held on 11 June 2007. The Symposium explored the role of space technology applications in addressing global challenges to the world's water resources and discussed strategies and tools to ensure wider access to a sustainable supply of safe and clean water. The Symposium also discussed how space-based tools and solutions could help decision makers with implementing a means of sustainably using water resources in order to demonstrate the opportunities offered for monitoring and managing water resources through space technologies and international cooperation. The moderator for the symposium was L. Beckel (Austria).

318. The following presentations were made during the symposium: "Space-based data and inter-jurisdictional water resources management" by W. Lichem (Austria), "Space and water for life" by Y. Berenguer (UNESCO), "Role of space-based systems for water resources management" by K. Radhakrishnan (Indian Space Research Organisation (ISRO)), "Advances in systemic observations of surface water and the marine environment in Africa" by A. Belward (European Commission) and "Latin American perspective on the use of space technology for water resources management" by C. Arévalo Yepes (Colombia). The presentations are available at http://www.unoosa.org/oosa/COPUOS/2007/symposium.html.

319. The Committee noted with appreciation that the Symposium had offered useful insights for the members of the Committee into the technical opportunities arising from space technology for water resources management, by highlighting examples of national and international achievements in terms of cooperation in the use of space technology for sustainable water resources management.

7. High-level Panel on Space Exploration

320. As agreed during the forty-ninth session of the Committee, and in accordance with paragraph 49 of General Assembly resolution 61/111, a High-level Panel on Space Exploration was held on 12 June 2007. The High-level Panel provided an opportunity for members of the Committee to discuss the motivations for and aspects of ongoing and planned space exploration activities and the possible future role the United Nations system could play in providing a forum for space-faring and space-using countries alike to consider space exploration-related issues.

321. Presentations were made by J. B. Higgins (NASA, United States), A. A. Abiodun (on behalf of NASRDA, Nigeria), C. de Cooker (ESA), Chang-Woo Kim (Ministry of Science and Technology, Republic of Korea), V. Mironov (Keldysh Research Center, Russian Federation), Y. V. Sobakinskikh (Centre for Operation of Space Ground-Based Infrastructure (TsENKI), Russian Federation), M. Othman (National Space Agency, Malaysia), B. N. Suresh (ISRO, India) and Zhang Wei (China National Space Administration). The presentations are available at http://www.unoosa.org/oosa/COPUOS/2007/panel.html.

322. The Committee also took note of the document entitled "The global exploration strategy: framework for coordination", which had been produced by 14 space agencies and distributed to the Committee in conference room paper A/AC.105/2007/CRP.6.

323. The Committee noted with appreciation that the High-level Panel had offered insights into ongoing national and global space exploration initiatives, which would be useful during the discussion on the future role and activities of the Committee. One particular question concerned a possible link between the Committee and the Global Exploration Strategy.

8. Exhibition: "50 Years of Space Achievements"

324. The Committee noted with appreciation that more than 30 Member States, United Nations organizations and international organizations had contributed to a multinational exhibition on the theme "50 Years of Space Achievements", held from 6 to 29 June 2007 in the Rotunda of the Vienna International Centre. Exhibitors included Algeria, Austria, Canada, China, Germany, Hungary, India, Indonesia, Italy, Japan, Lebanon, Malaysia, Morocco, Namibia, the Russian Federation, Saudi Arabia, Spain, Thailand, the United Kingdom, the United States, the Office for Outer Space Affairs, the United Nations Environment Programme, UNHCR, the United Nations Inter-Agency Meeting on Outer Space Activities, ESA, ITU, COSPAR, IAF, the International Heliophysical Year (2007), ISPRS and the United States Geological Survey (USGS). A further exhibition, entitled "Space weather", part of the project on "Space Weather and Europe – an Educational Tool with the Sun" (SWEETS), was held in a multimedia bus located in the plaza of the Vienna International Centre.

J. Schedule of work of the Committee and its subsidiary bodies

325. The Committee agreed on the following tentative timetable for its session and those of its subcommittees in 2008:

	Date	*Location*
Scientific and Technical Subcommittee	11-22 February 2008	Vienna
Legal Subcommittee	31 March-11 April 2008	Vienna
Committee on the Peaceful Uses of Outer Space	11-20 June 2008	Vienna

Annex

Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space

1. Background

Since the Committee on the Peaceful Uses of Outer Space published its Technical Report on Space Debris in 1999,[a] it has been a common understanding that the current space debris environment poses a risk to spacecraft in Earth orbit. For the purpose of this document, space debris is defined as all man-made objects, including fragments and elements thereof, in Earth orbit or re-entering the atmosphere, that are non-functional. As the population of debris continues to grow, the probability of collisions that could lead to potential damage will consequently increase. In addition, there is also the risk of damage on the ground, if debris survives Earth's atmospheric re-entry. The prompt implementation of appropriate debris mitigation measures is therefore considered a prudent and necessary step towards preserving the outer space environment for future generations.

Historically, the primary sources of space debris in Earth orbits have been (a) accidental and intentional break-ups which produce long-lived debris and (b) debris released intentionally during the operation of launch vehicle orbital stages and spacecraft. In the future, fragments generated by collisions are expected to be a significant source of space debris.

Space debris mitigation measures can be divided into two broad categories: those that curtail the generation of potentially harmful space debris in the near term and those that limit their generation over the longer term. The former involves the curtailment of the production of mission-related space debris and the avoidance of break-ups. The latter concerns end-of-life procedures that remove decommissioned spacecraft and launch vehicle orbital stages from regions populated by operational spacecraft.

2. Rationale

The implementation of space debris mitigation measures is recommended since some space debris has the potential to damage spacecraft, leading to loss of mission, or loss of life in the case of manned spacecraft. For manned flight orbits, space debris mitigation measures are highly relevant due to crew safety implications.

A set of mitigation guidelines has been developed by the Inter-Agency Space Debris Coordination Committee (IADC), reflecting the fundamental mitigation elements of a series of existing practices, standards, codes and handbooks developed by a number of national and international organizations. The Committee on the Peaceful Uses of Outer Space acknowledges the benefit of a set of high-level qualitative guidelines, having wider acceptance among the global space community. The Working Group on Space Debris was therefore established (by the Scientific and Technical Subcommittee of the Committee) to develop a set of recommended

[a] United Nations publication, Sales No. E.99.I.17.

guidelines based on the technical content and the basic definitions of the IADC space debris mitigation guidelines, and taking into consideration the United Nations treaties and principles on outer space.

3. Application

Member States and international organizations should voluntarily take measures, through national mechanisms or through their own applicable mechanisms, to ensure that these guidelines are implemented, to the greatest extent feasible, through space debris mitigation practices and procedures.

These guidelines are applicable to mission planning and the operation of newly designed spacecraft and orbital stages and, if possible, to existing ones. They are not legally binding under international law.

It is also recognized that exceptions to the implementation of individual guidelines or elements thereof may be justified, for example, by the provisions of the United Nations treaties and principles on outer space.

4. Space debris mitigation guidelines

The following guidelines should be considered for the mission planning, design, manufacture and operational (launch, mission and disposal) phases of spacecraft and launch vehicle orbital stages:

Guideline 1: Limit debris released during normal operations

Space systems should be designed not to release debris during normal operations. If this is not feasible, the effect of any release of debris on the outer space environment should be minimized.

During the early decades of the space age, launch vehicle and spacecraft designers permitted the intentional release of numerous mission-related objects into Earth orbit, including, among other things, sensor covers, separation mechanisms and deployment articles. Dedicated design efforts, prompted by the recognition of the threat posed by such objects, have proved effective in reducing this source of space debris.

Guideline 2: Minimize the potential for break-ups during operational phases

Spacecraft and launch vehicle orbital stages should be designed to avoid failure modes which may lead to accidental break-ups. In cases where a condition leading to such a failure is detected, disposal and passivation measures should be planned and executed to avoid break-ups.

Historically, some break-ups have been caused by space system malfunctions, such as catastrophic failures of propulsion and power systems. By incorporating

potential break-up scenarios in failure mode analysis, the probability of these catastrophic events can be reduced.

Guideline 3: Limit the probability of accidental collision in orbit

In developing the design and mission profile of spacecraft and launch vehicle stages, the probability of accidental collision with known objects during the system's launch phase and orbital lifetime should be estimated and limited. If available orbital data indicate a potential collision, adjustment of the launch time or an on-orbit avoidance manoeuvre should be considered.

Some accidental collisions have already been identified. Numerous studies indicate that, as the number and mass of space debris increase, the primary source of new space debris is likely to be from collisions. Collision avoidance procedures have already been adopted by some Member States and international organizations.

Guideline 4: Avoid intentional destruction and other harmful activities

Recognizing that an increased risk of collision could pose a threat to space operations, the intentional destruction of any on-orbit spacecraft and launch vehicle orbital stages or other harmful activities that generate long-lived debris should be avoided.

When intentional break-ups are necessary, they should be conducted at sufficiently low altitudes to limit the orbital lifetime of resulting fragments.

Guideline 5: Minimize potential for post-mission break-ups resulting from stored energy

In order to limit the risk to other spacecraft and launch vehicle orbital stages from accidental break-ups, all on-board sources of stored energy should be depleted or made safe when they are no longer required for mission operations or post-mission disposal.

By far the largest percentage of the catalogued space debris population originated from the fragmentation of spacecraft and launch vehicle orbital stages. The majority of those break-ups were unintentional, many arising from the abandonment of spacecraft and launch vehicle orbital stages with significant amounts of stored energy. The most effective mitigation measures have been the passivation of spacecraft and launch vehicle orbital stages at the end of their mission. Passivation requires the removal of all forms of stored energy, including residual propellants and compressed fluids and the discharge of electrical storage devices.

Guideline 6: Limit the long-term presence of spacecraft and launch vehicle orbital stages in the low-Earth orbit (LEO) region after the end of their mission

Spacecraft and launch vehicle orbital stages that have terminated their operational phases in orbits that pass through the LEO region should be removed from orbit in a controlled fashion. If this is not possible, they should be disposed of in orbits that avoid their long-term presence in the LEO region.

When making determinations regarding potential solutions for removing objects from LEO, due consideration should be given to ensuring that debris that survives to reach the surface of the Earth does not pose an undue risk to people or property, including through environmental pollution caused by hazardous substances.

Guideline 7: Limit the long-term interference of spacecraft and launch vehicle orbital stages with the geosynchronous Earth orbit (GEO) region after the end of their mission

Spacecraft and launch vehicle orbital stages that have terminated their operational phases in orbits that pass through the GEO region should be left in orbits that avoid their long-term interference with the GEO region.

For space objects in or near the GEO region, the potential for future collisions can be reduced by leaving objects at the end of their mission in an orbit above the GEO region such that they will not interfere with, or return to, the GEO region.

5. Updates

Research by Member States and international organizations in the area of space debris should continue in a spirit of international cooperation to maximize the benefits of space debris mitigation initiatives. This document will be reviewed and may be revised, as warranted, in the light of new findings.

6. Reference

The reference version of the IADC space debris mitigation guidelines at the time of the publication of this document is contained in the annex to document A/AC.105/C.1/L.260.

For more in-depth descriptions and recommendations pertaining to space debris mitigation measures, Member States and international organizations may refer to the latest version of the IADC space debris mitigation guidelines and other supporting documents, which can be found on the IADC website (www.iadc-online.org).